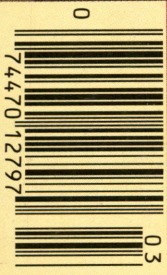


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Inside: Blue Moods for *Crossroads*

American Cinematographer



New Magic for Young Sherlock Holmes
Out of the Shadows *The Bat* Whispers

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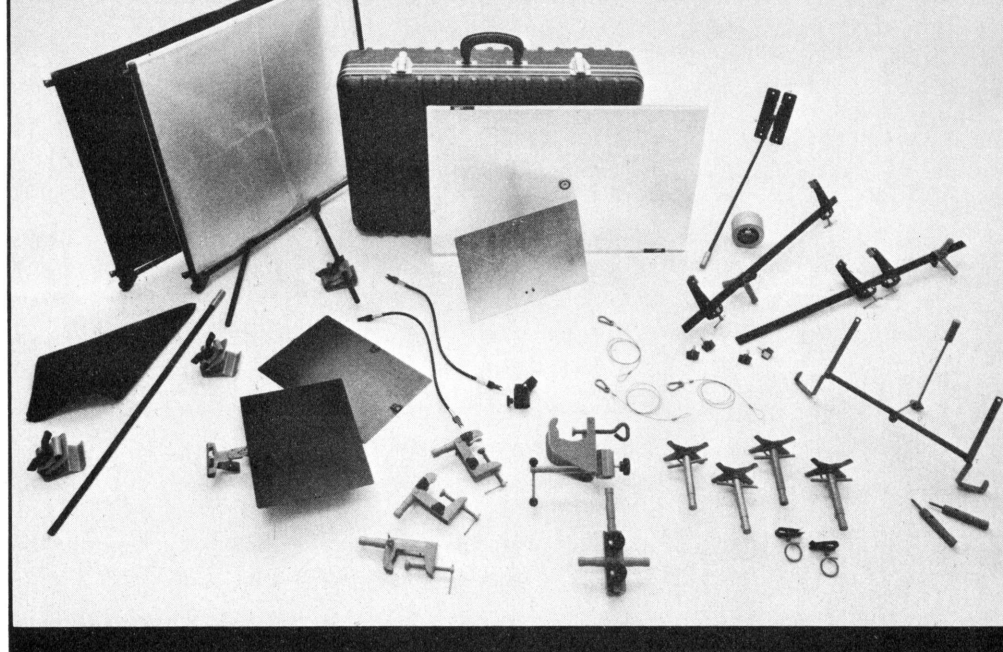
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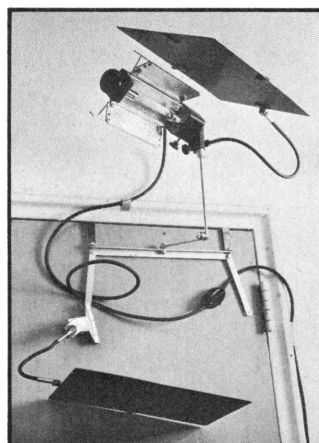
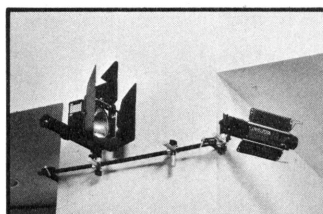
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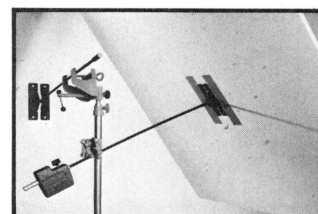
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Eccles) confronted by T
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Sherlock Holmes*.



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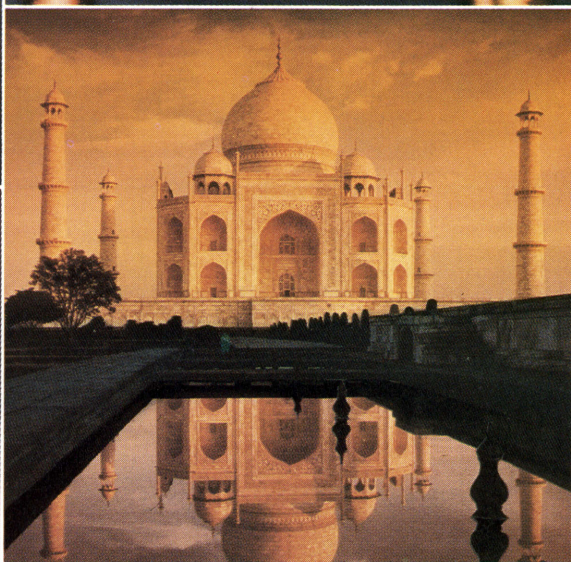
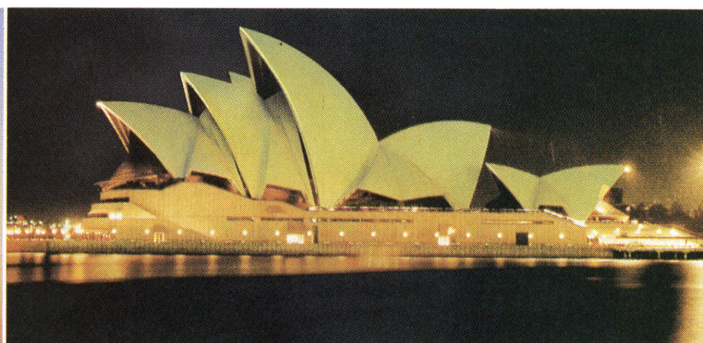
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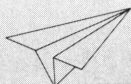
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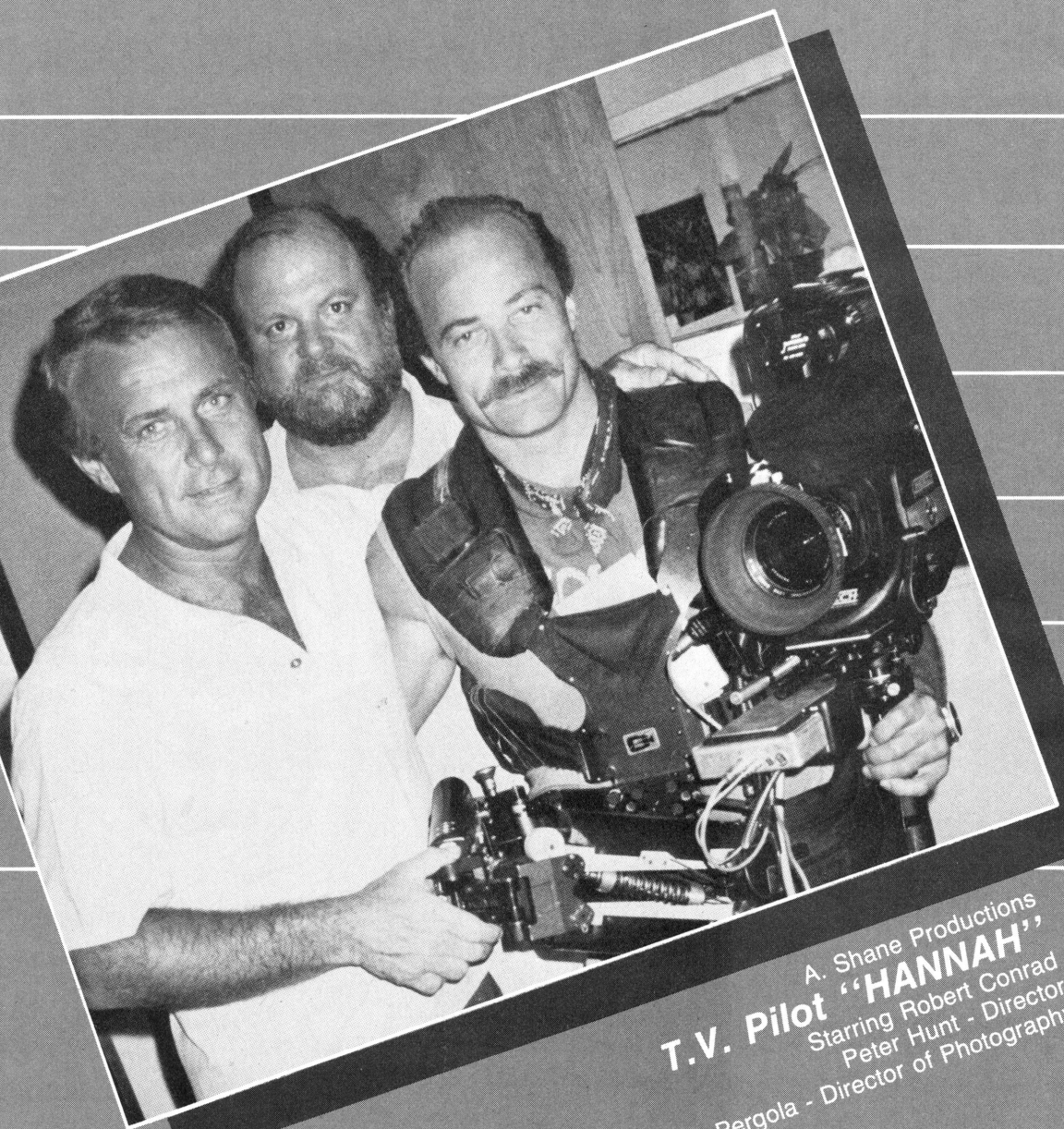
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Why we helped with the design of this Housing:

People asked us: "Why can't we shoot pin-registered, with video monitoring and crystal speeds under water?" So we helped Hydroflex with the design; and we made our own modifications, such as remote control.

"As the actress swam close by camera, the shot began to go soft. I could see that in the housing's reflex finder, even though I was at T16."

Focus at T16

"I'd never been able to see focus that accurately before—not underwater," says Operator Mike Ferris. "And this new housing allowed me to see the whole image without moving my head around."

Helpful

"We were shooting an E.F. Hutton commercial in a big sunlit swimming pool—

two women athletes diving in. I was able to swim away from the actress a little bit and swim *with* her... I found myself concentrating more on creativity because the housing *wasn't* cumbersome," says Mr. Ferris.

As you can see from the photos on the opposite page, the special eyepiece on the camera is bigger than standard. The viewing optics are almost twice the diameter.

Eye off axis

This eyepiece (with its adjustable diopter) puts

the exit pupil back behind your face mask, where your eye is. The bigger optics give you the brightest image available underwater. And you can easily see the image without keeping your eye on axis.

Body off axis

Axis schmaxis. With the housing's video monitor, your eye and your *body* can be wherever you want them. The monitor swivels and rotates. In tight quarters, that can help a lot. It runs on the two batteries inside the Hydroflex.

So does the remote monitoring. It uses the standard Arriflex video tap; and it works with any standard dry-land monitoring equipment, up to 500 feet away.

Remote control
You can also get remote control of start/stop/focus/diaphragm — also up to 500 feet away. There's a tripod socket and there are mounting points on the handles. You could set up an underwater rig and operate the whole thing from dry land. The Hydroflex works down to 250 feet.

Lights inside
If you're in the water with the Hydroflex, there are the usual external controls for focus and iris, with interchangeable scales. There's a lens setting verification port with a light inside. Ditto for the magazine footage counter. In the unlikely event of a leak, you'll hear a loud squeal from the warning alarm.

Lenses and crystal speeds
Our Arriflex 35-3 cameras have PL mounts. You can use any Superspeed or standard Zeiss lenses. The range is from 9.8mm to

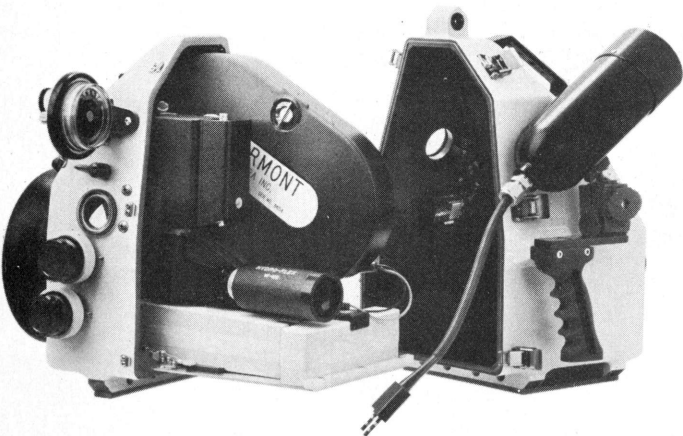
135mm. You can shoot at any speed from 4 to 125 fps, all crystal-controlled.

One person
First Assistant Wayne Baker used one of our Hydroflexes on the Paramount feature *Top Gun*. "With most other housings, it takes two people to haul it out of the water and carry it around," he says. "One person can handle this one."

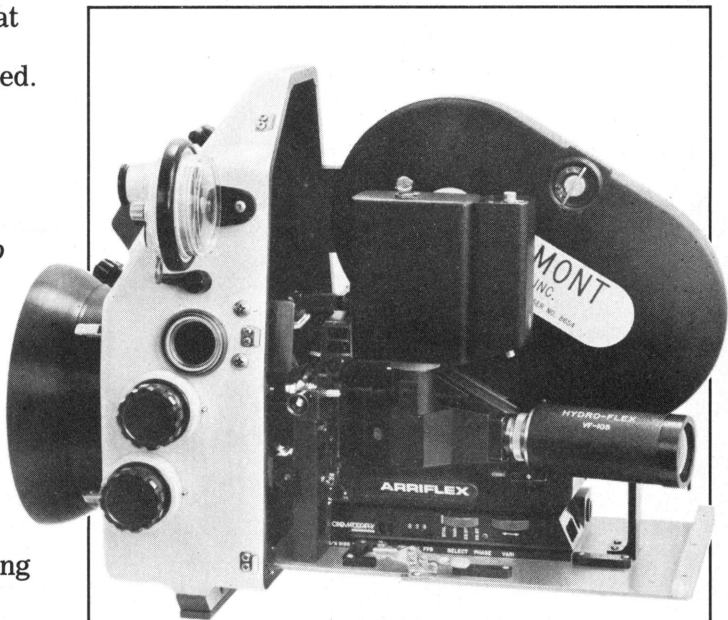
More time in the water
And what about changing magazines and lenses? "This," he says, "Is the first housing I've come across that lets you spend more time in the water shooting than you spend up on deck working with it."

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"People are used to shooting on a stage," says underwater specialist Wayne Baker. "When you tell them *at least* fifteen minutes for a mag change, they cannot believe it."

Timed test
We timed Mr. Baker changing the magazine on a 35-3 inside one of our Hydroflexes. No pressurization, six quick-release latches, no water drips to the inside,

camera sliding back on its tray. It took him 1 minute and 52 seconds.

Changing lenses & filters
Lens and filter changes are even faster. With the tray back, it's easy to see the lens settings. No flashlight, no dentist's mirror. You can even change filters through the front lens port. Four quick-release latches. Torque automatically correct.

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Letters

Of the Great Whales

From your story, National Geographic Specials, Part I, Oct. 1985, the stated implication is that Mr. Jim Hudnall was the first to swim with "any" of the "Great Whales."

I do not know who was the first. I do know that my close personal friend, Dr. Hans Hass and his wife Lotte, swam with and filmed sperm whale for one of their television series in the early 1950s. Cousteau had filmed sperm whale in the 1960s. And what surprises me very much in an article about the National Geographic is that in 1971-72 William Curtsinger of the National Geographic took pictures of and Andres Pruna filmed the Southern Right whale.

In fact, in 1972/73 my wife Ann, Andres Pruna and myself made a film about the Southern Right whales which came out first on BBC, then subsequently on PBS in America.

I make no claims; however, the BBC Natural History Unit states that our film, "Valdes Bay of Whales" seen in America as "A Prospect of Whales" was the world's first "whale" film. By that they mean the first film ever made where the filming of whales underwater was its goal and where humans and great whales interact. My wife and I have subsequently filmed grey whale, humpback whale, killer whale, sperm whale. And the only "first" I can personally claim is that I was the first to film blue whale underwater.

—Krov M Menuhin, FRGS
St. Remy de Provence,
France

Mr. Hudnall made no claim to be the "first" in any of your mentioned categories. However, American Cinematographer has documented

evidence that Mr. Hudnall was the first human to approach the humpback whale, alone in a small boat, un-supported by camera crews or a wife, and swim with the whales in a free environment. This approach was a "first" and it is the only implication intended in the story.

Tales

While I very much appreciate your interest in writing about "Darkside", (January, 1986) I feel that there are several implications or inaccuracies which ought to be corrected.

T.J. Castronova has been the line producer of 23 of the 48 episodes. Your article makes it sound like he produced all 48. William Teitler produced all the other shows in N.Y. Laurel-T.V. has no involvement in a proposed series called "Scary Tales."

With all due respect to Mr. Porath, he was not director of photography on most of the first year's L.A. shows. Karen Grossman was.

There are three executive producers for the series. In order of screen credit they are: myself, George A. Romero and Jerry Golod. All of the scripts are developed out of N.Y. under the day to day supervision of Tom Allen. Directors are also assigned and approved by N.Y. This function provides the series continuity.

The second season was not "profitable". We put 100% of our license fees into the shows.

—Richard P. Rubenstein
New York

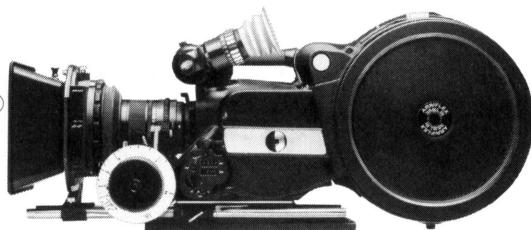
Because our story set out to cover only the current work being done at the Los Angeles facility, we made no attempt to cover either New York or the first season's productions.

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The Bookshelf

by George L. George

In **D. W. Griffith and the Biograph Company**, Cooper C. Graham, Steven Higgins, Elaine Mancini and Joao Luiz Vieira document Griffith's work as Biograph's leading director and supervisor 1980-13. Included are filmographies of creative and technical personnel, and extensive data on some 800 Biograph films of the period (*Scarecrow, Metuchen, NJ, \$27.50*).

Two recent volumes in the Twayne Filmmakers series survey the careers of prominent directors: **John Huston** by Scott Hammen and **Roger Corman** by Gary Morris. Informative and scholarly, they offer in-depth analyses of both directors' cinematic concepts in terms of style and content, film critiques, a bibliography, a filmography, and assorted references (*G.K. Hall, Boston, \$18.95 and \$24.95*).

A study of Preston Sturges' career and his approach to screen comedy, **Intrepid Laughter** by Andrew Dickos knowingly defines his particular brand of humor, clarifying the link between the verbal dexterity of Sturges' screenplays and the visual sureness of his directorial style (*Scarecrow, Metuchen, NJ, \$15*).

Form and content in the films of two Italian directors are examined in **Bernardo Bertolucci** by Robert Phillip Kolker and **Antonioni or, The Surface of the World** by Seymour Chatman. Bertolucci's recurring concern with politics and history, and the rich visual texture of his films demonstrate a powerful consistency and a continual quest for new forms of expression. Antonioni's distinguishing strength lies in his intense concentration on the sheer visual appearance of things and a rejection of explanatory dialogue (*Oxford U. Press, NYC, \$17.95; U. of California Press, Berkeley, \$25/12.95*).

David Robinson's superior biography, **Chaplin: His Life and Art** is an achievement remarkable in the com-

pleteness of its portrait of the comedian. Benefiting from the cooperation of Chaplin's widow, Robinson records with insight and skill the successive stages of his career, analyzes his work methods, discusses his films, and unfolds the rich substance of his private and public life (*McGraw-Hill, NYC, \$24.95*).

Film historian Kemp R. Niver, who restored and catalogued the invaluable archive of some 3000 paper prints in the Library of Congress, describes in **Early Motion Pictures** (edited by Bebe Bergsten) these 1894-1912 movies, now a primary source for reference and study (*Library of Congress, Washington, \$24*).

The innovative Czech films of the 1960s and their experimental cinematic style are examined by Peter Hames in **The Czechoslovak New Wave**, a critical assessment of their impact on society and their roots in the country's cultural tradition (*U. of California Press, Berkeley, \$35*).

French filmmaking under the German occupation accounted for a number of quality movies acceptable to the Resistance. Evelyn Ehrlich discusses this unexpected circumstance in **Cinema of Paradox**, a perceptive, factual study of the personalities and films of the time, and the conditions of production (*Columbia U. Press, NYC, \$25*).

In **Fifty Classic British Films**, Anthony Slide compiles an impressive pictorial record of Great Britain's achievements in motion picture production from *The Private Life of Henry VIII* to *Gandhi*, offering an informative commentary illustrated with some 200 superb stills (*Dover, NYC, \$9.95*).

Two important and thoughtful studies of the feminist approach to film censorship support Betty Friedan's advice to women to "get off the pornogra-

Cinematographer Andrew Laszlo, A.S.C.
Lights "Remo Williams, The Adventure
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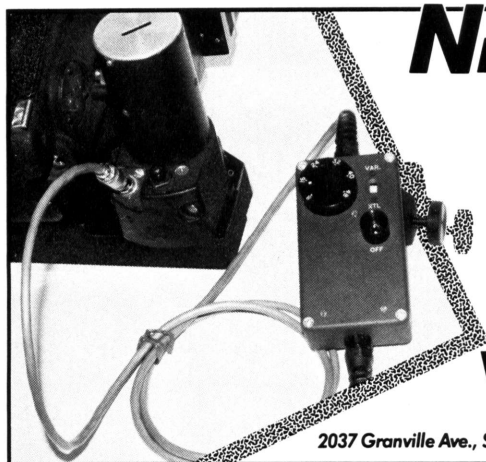
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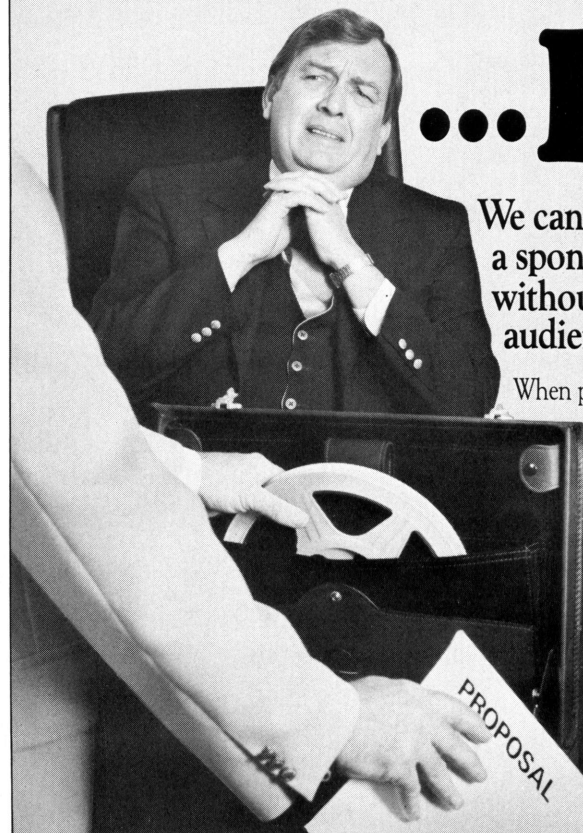
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phy kick" and face society's real obscenities. **Women Against censorship**, edited by Varda Burstyn, and **Magic Mommas, Trembling Sisters, Puritans and Perverts** by Joanna Russ reject as tenuous the link between pornography and violence, arguing that outlawing film pornography "would not do women much good and possibly do them a great deal of harm" (*Salem House, Salem, NH, \$8.95; The Crossing Press, Trumansburg, NY, \$16.95/6.95*).

Edited by Peter Steven with a flair for the topical, **Jump Cut** reprints significant articles from the similarly named quarterly. Their common ground is "counter-cinema," a catch-all term for dynamic opposition to the Hollywood concept of film as entertainment, as identified with radical Third-World filmmakers (*Praeger, NYC, \$34.95/12.95*).

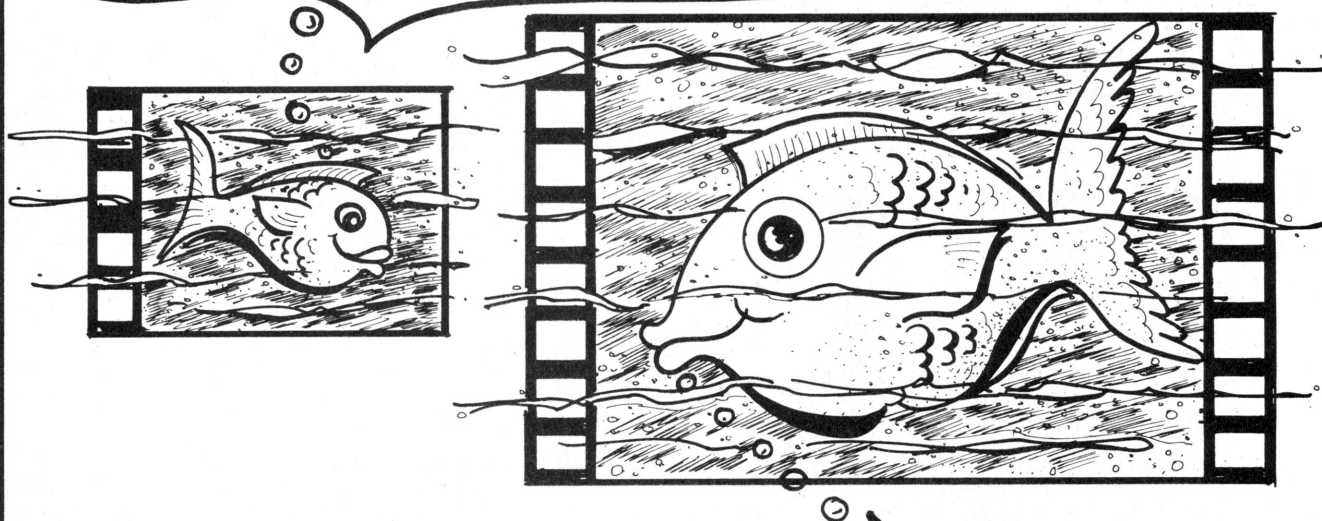
Prof. Bruce Morrisette stresses in **Novel and Film** the structural interrelation of the two crafts. He explores the problems of narrative technique and approach, and their subtle counterpoint in the works of French novelist/screenwriter Alain Robbe-Grillet (*U. of Chicago Press, Chicago, \$26/10.95*).

The best in British photography — from advertising to photojournalism to art — appears in **British Journal of Photography Annual 1986**, a collection of some 200 stills remarkable for their creative approach and professional expertise. Extensive data on holography, color processing and other techniques is provided (*Writer's Digest Books, Cincinnati, OH, \$18.95*).

Chosen and presented by Gregory J. Edwards, the samples of graphic art reproduced in **The International Film Poster** illustrate its role in cinema art, advertising and history. Striking Japanese, Polish, German and French posters, and a few American too, reflect a dazzling diversity of styles and techniques (*Salem House, Salem, NH, \$14.95*). △

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DU ART DOES IT BETTER

Happy Wedding of Film-to-Tape Equipment

by Chris Gyoury



In the January 1985 issue of *American Cinematographer* an article written by me appeared in which I described the evolution of an idea for eliminating the worrisome weave encountered by Rank Cintel users when transferring 35mm film to tape. The piece of equipment that I made and used to test the idea became affectionately nicknamed 'The Golden Gate'. It was a register pin gate that provided its own intermittent motion by means of a stand alone microprocessor and stepper motors for film transport and registration.

There was considerable response to my paper from all corners of the globe. Rank users phoned or wrote endorsing my belief that if the 'weave' could be eliminated, a whole new area of creative videotape post production would be opened up that hitherto had remained just a theoretical possibility, but far from a practical probability. Readers who remember the article will recall that our need (like others, it seemed) sprang from actual working requirements of marrying filmed original material with either computer generated

graphics or pursuing the more conventional film processes of rotoscoping and matte painting followed by video compositing of multiple images.

It quickly became apparent that the new gate was starting to earn a very healthy living for itself as more and more producers requested its use for conventional video finishing, even if their needs were as humble as just titles or logos. But it was in the more adventurous areas of complex video compositing that we all saw a really bright future forming up.

I was in the process of investigating the feasibility of producing the gate on a commercial basis, when I received a call from Wayne Smith of Cascom Corporation, Tennessee. Wayne had been pursuing a weave free gate project of his own for some years and it quickly became clear that we had interests in common. Within a short time we met and I demonstrated the workings of our invention. One of the salient points of the idea that made it unique in the technology so far, and of great significance to Wayne, was that

the gate was strictly a retro-fit to the Cintel. There were *absolutely no modifications required* to the user's Rank itself and indeed the Rank could be converted to 'weave free' use and back again in only a few seconds.

Wayne Smith and I quickly came to terms and gave the gate the more commercial name of 'Steady-Film'. The Steadi-Film Corporation of Nashville, Tennessee, acquired the full manufacturing and marketing rights of the gate on a worldwide basis.

We immediately set ourselves the task of doing design refinements and interfacing the gate microprocessor with all known recording apparatus that likely customers might have. This having been achieved and tested, we started to look at prototype production models and the setting up of production engineering facilities in the United States.

We decided to launch Steadi-Film at the 1985 SMPTE Convention in Los Angeles, and with limited time to spare, there followed a hectic period of preparation to ready ourselves for what would be a rigorous unveiling of a brand new piece of equipment to an extremely critical audience.

As the SMPTE convention opened its doors on 28th October, 1985, it rapidly became clear that 'Steady-Film' was a product that the industry sorely needed. Enthusiastic Cintel owners came to the booth to lament the problem of weave and extol the virtues of Steadi-Film. It seemed that there was a joyous expression of excitement at the 'marriage' of Rank's tried, approved and respected equipment with the newcomer from the Steadi-Film Corporation.

At the time of writing, the Steadi-Film Corporation is engrossed in a manufacturing program which is in direct response to the enthusiastic welcome that we received at the SMPTE Convention.

continued

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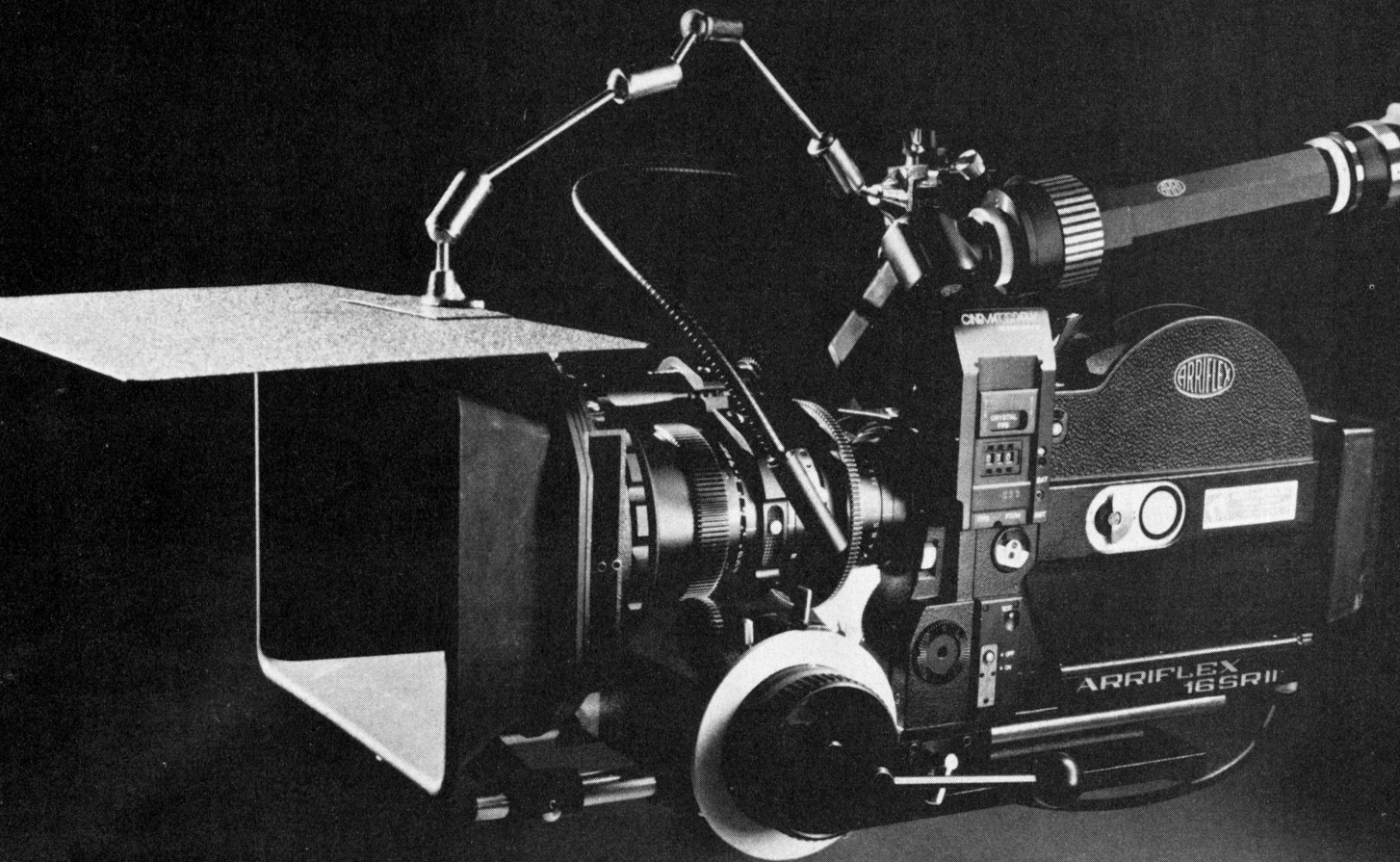
Cinematography Electronics Crystal Speed Control with all speeds crystal and LED footage/meter and FPS display.

The on-camera flex-light for checking gate, magazine, focus and zoom marks.

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As more and more orders start to come in for this brand new product, it is fascinating to ponder the events of the past few months. Events that started off with an article in *American Cinematographer* and ended with the launch of a much needed piece of equipment for our industry on a world wide basis.

For further information contact: Steadi-Film Corp., 707 18th Ave. So., Nashville, TN 37203. (615) 329-2073.



Overhead Help

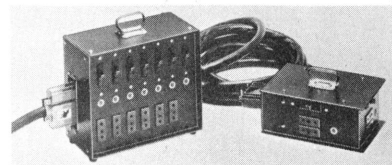
The Model GR-3 Wheelit Folding Video Cart is designed to store, transport, and operate any portable 1/2" VCR system. It can hold up to 150 lbs. of equipment plus a 10 lb. camera on its mono-pod column with fluid head that smoothly pans or tilts to get that perfect "shot."

The mono-pod elevates from 3'7" to 6'10" to get those important over the head shots when everyone is standing in front of you.

Three brackets and equipment straps are provided to securely mount all equipment to the cart so there is no danger of something coming loose and falling during a hectic "shoot."

A big 34" x 13" component board will hold any size equipment and 4" swivel casters with locks plus 8" semi-pneumatic tires and steel frame provide cushioning and strength to protect delicate electronic equipment.

For further information, contact: Wheelit, Inc., 440 Arco Drive, Toledo, Ohio 43607.



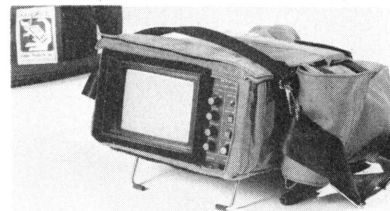
Portable Distribution Center

A new, versatile, portable distribution center from Union Connector is ideal for TV studios, rock shows, and location shots.

The 100 amp single phase input supplies six 20 amp and one 60 amp breaker protected circuits. The 20 amp circuits are available with stage pin, "U" ground, and twist lock receptacles. The 60 amp output can be used to feed "downstream" to smaller amperage outputs.

All circuits have indicator lights to monitor activity. Weighing only 15 lbs., the 12"x20"x8" box is easily carried by its handle.

For more information, contact the Union Connector Co., Inc. PO Box H, Roosevelt, NY 11575. (516) 623-7461.



Monitor Cover

Kangaroo Video Products announces its KVP TM-22 monitor cover specifically designed to match the JVC TM-22U color monitor and to upgrade its convenience and resistance to wear and exposure from in-the-field use.

Protective features include a sturdy weather-proof shell of Cordura nylon fabric. A three-inch extended hood with drawstring protects the rear cable ports from dust and rain. Case flaps covering the top and bottom of the monitor can be opened for ventilation and extended monitor life.

A special design feature of the KVP TM-22 is its four-sided removable visor which shields the screen and maximizes the image under bright-light conditions.

For more information, contact Kangaroo Video Products, Inc., 10845 Wheatlands, Ave., Suite C, Santee, California 92071; (619) 562-9696.

continued

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SENNHEISER SK-2012 TVH WIRELESS POCKET TRANSMITTER.

Available in UHF and VHF models
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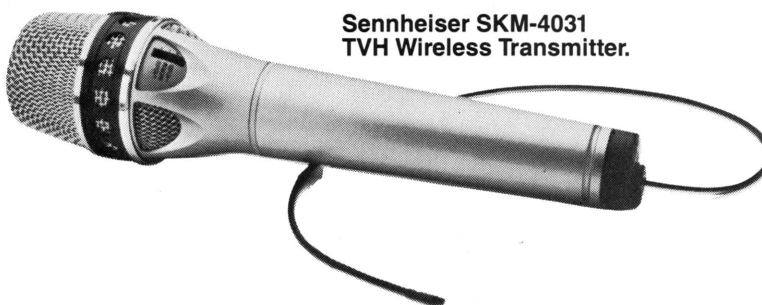
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• ± 10 dB sensitivity pad • wide screen removable for cleaning.



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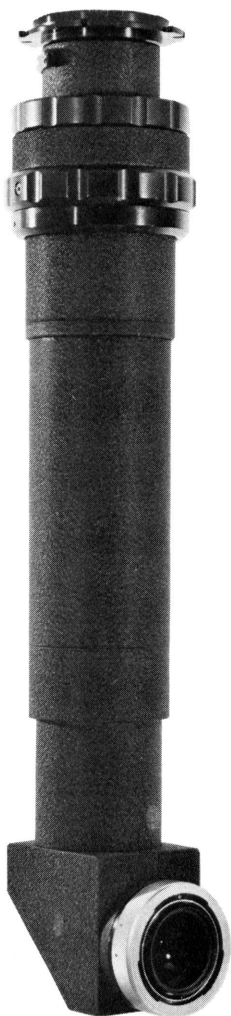
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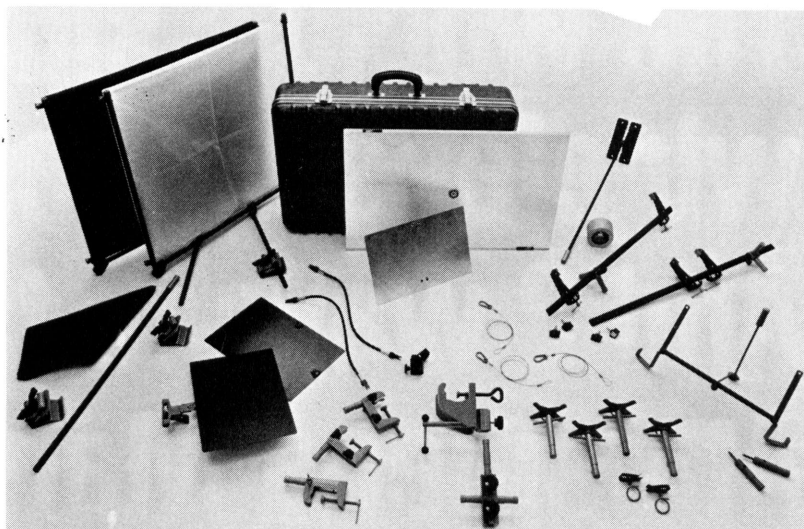


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New Surmountable Kit

The Lowel Surmountable Kit consists of 38 of the most versatile clamping, mounting, rigging and light control components available. They can be used individually, or interconnected, to secure lights and accessories to posts, beams, door tops, dropped ceilings, windows and walls, or to diffuse, block or reflect light.

Some of the Lowel components are: fold-up frame-ups with black and translucent mats, lightflector, space-clamps, Tota-clamps, Tota-mount, scissor-mounts, grip and interlink and safety cables.

The Surmountable Kit can increase the quality of video, film or still images through sophisticated light control and, at the same time, simplify set-ups. For storage and travel all of the equipment fits into one molded case, 27"x17"x7", and weighs 28 lbs.; ideal for distant locations as well as studio work.

For further information: Lowel Light Manufacturing Inc., 475 Tenth Ave., New York. 10018 (212) 947-0950.

Spotmeters

Complementing the built-in metering system of modern cameras, Spiratone Spotmeters allow the user to determine, from a distance, the reflectance value of any small area within the subject. In this way, the Spotmeters make it possible to reproduce that particular value accurately, instead of depending on the camera meter's average

reading which is often affected by the less important portions of the subject.

Spiratone Spotmeters are made in two models: the SP-I is equipped with an analog scale readout, while the SP-II presents the information in a 3-digit display at the bottom of its built-in viewing screen, with a highly critical 1/10 EV step display resolution.



Both models use silicon photo diodes, cover a film speed ISO range from 6/9° to 6400/39°, an EV (exposure value) range for ISO 100 of -2 to 18 and an f stop, range from 1 to 45. The Spotmeters, 100mm f/2.8 viewing lens covers an 11x15° field.

Spiratone Spotmeters utilize standard 9v. batteries which are included in the price. The SP-I analog model is priced at \$99.95, the SP-II digital model at \$139.95, each complete with soft carrying pouch.

For further information, contact Spiratone, Inc., 135-06 Northern Boulevard, Flushing, N.Y. 11354.

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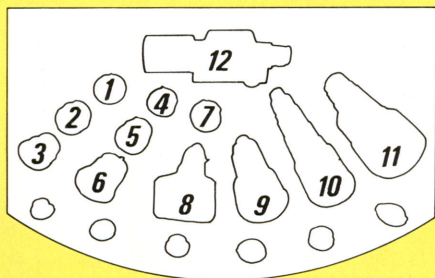


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The Canon lenses illustrated above are part of our huge stock of equipment for film and video production.

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Canon Zoom (16mm format). 8. 7-56mm T2.1.

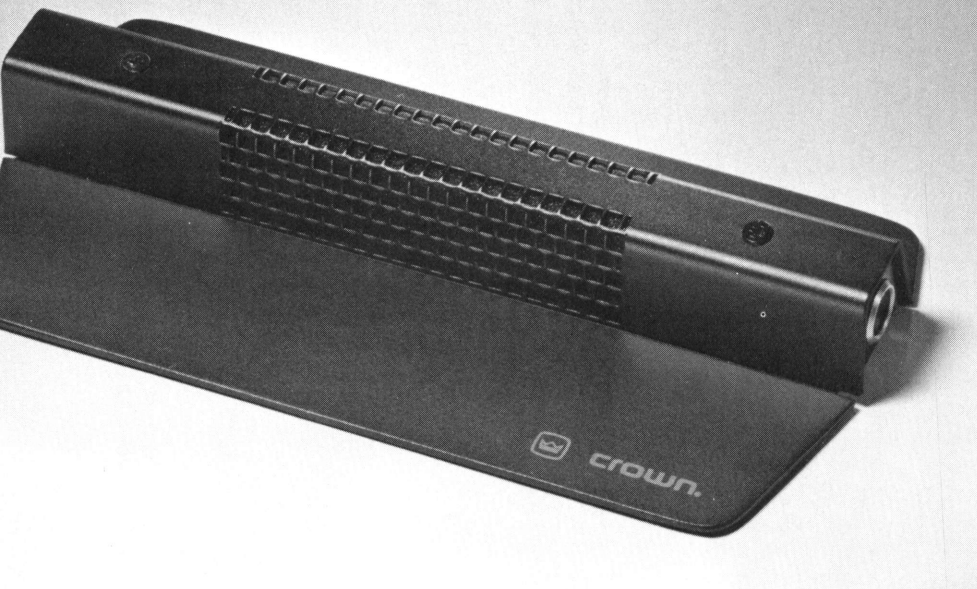
Canon Supertelephotos (16mm, 35mm, Video). 9. 300mm, f2.8, 10. 500mm, f4.5, 11. 400mm, f2.8. Also available: 600mm, f4.5; 800mm, f5.6.

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For stage reinforcement, podiums, news desks, or for hiding in sets, the PCC-160 offers superior performance.

And because the microphone is mounted on a boundary, direct and reflected sounds arrive at the diaphragm in-phase. The result...wide, smooth frequency response free of tonal coloration or unnatural sound which can occur with conventional microphones.

Self-contained electronics eliminate the need for a sometimes awkward in-line preamp box. The PCC-160 can be powered directly from the console or other remote power source. Or if battery power is convenient, a battery supply unit can be inserted anywhere in the mike line...right up to the console or mixer.

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Now a small hand-held optical tach has been made especially for the film-video industry. The Cine Check easily reads the AC line frequency by simply pointing the sensor at a HMI or incandescent lamp. The Cine Check will also read video or computer flicker scan rates directly from a monitor. For checking all camera speeds, shine flashlight or sunlight into lens, then point Cine Check into eyepiece. The reading is in frames per second (accurate to .01 fps).

For more information contact: Cinematography Electronics, Inc., 1625 Stanford Street, Santa Monica, CA 90404, Phone (213) 829-1811.



Polar Video Switcher

Listec Television Equipment Corporation, Plainview, N.Y. announces it will distribute the Polar Video line of products in the United States. The first will be the PVM-1 production video switcher.

The PVM-1 is a self-contained 4 input production video switcher offering a unique combination of features. Inputs appear across 3 busses, the third buss having a fifth position for black. Two fader bars are provided allowing one to mix from A to B or from B to C.

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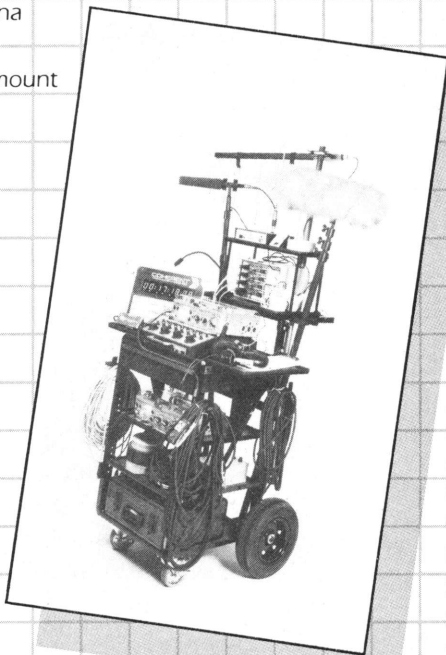
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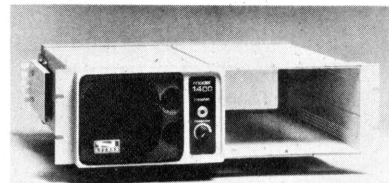
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Photos by Rory Flynn

THE RETURN OF THE LIVING DEAD

a Comic Strip

by Ron Magid

Produced by Tom Fox
Directed by Dan O'Bannon
Jules Brenner, director of photography

The year 1950 heralded the advent of three cartoon magazines under the Entertainment Comics masthead that would forever change the faces of terror: *Tales From The Crypt*, *The Vault Of Horror*, and the *Haunt Of Fear*. These "comics" specialized in the depiction of hideous cadavers emerging from their graves in the dead of night to exact terrible revenge upon the living. In addition to the creation of a pervasive mood of horror, the E.C. Comics had developed a highly cinematic style of storytelling, with dramatic framing, high angles, eerie lighting effects, shock cuts and zooms.

In the grand tradition of E.C. Comics, the action of *Return Of The Living Dead*, director/screenwriter Dan O'Bannon's funny 'sequel' to George A. Romero's seminal 1968 zombie film, *Night Of The Living Dead*, follows the misadventures of a group of teenagers as they attempt to escape from a cemetery where the dead have risen from their graves.

O'Bannon's script is filled with twists and variations on the rules Romero and his imitators have established governing the behavior of the living dead in film. The walking corpses of O'Bannon's grimly comic scenario, unlike Romero's, are virtually unstoppable—they cannot be killed, and their resurrection is due entirely to the introduction of a man-made chemical, Trioxin, into the cemetery soil. The film's protagonists aren't ordinary, run-of-the-mill teenagers, but punk rockers, a logical choice since this group is underused in film, and its members surround themselves with death imagery. O'Bannon's continuous reversals of audience expectation may result in *Return Of The Living Dead* being long remembered as the first revisionist zombie film.

The film marks Dan O'Bannon's debut as director, though he is known as the screenwriter of *Alien*, *Blue Thunder*, *Lifeforce*, and the upcoming remake of *Invaders From Mars*. It should come as no surprise that

O'Bannon is a confirmed E.C. Comics fanatic. Nor will many be shocked to learn that his production designer, Bill Stout, is also an avid E.C. devotee and comic artist of some repute, or that cinematographer Jules Brenner was director of photography on the television terror film, *Salem's Lot*. The similarities and differences in style among O'Bannon, Stout and Brenner resulted in a unique collaboration, a highly unusual blend of fantasy and reality which can only be described as 'comic book.'

"I don't recall any moment when I actually decided I'm going to make this movie like a comic book," said O'Bannon. "I don't recall any moment when anybody even discussed that, but I just couldn't keep *Tales From The Crypt* out of my head. My production designer, Bill Stout, is also intimately familiar with those old horror comics. Between the two of us, we couldn't resist. It came out not as a conscious decision, never a moment when I said, 'Let's set this shot up like a comic book,' but more like an instinct."

"*The Return Of The Living Dead* was just a natural project to bring alive the E.C. influence," added Stout. "Since E.C. Comics were an interest of both mine and Dan's, we thought it was time to let everyone in on the joke, let them see what an E.C. Comic would look like on the screen. The black humored glee, the enthusiasm for horror that those comics had was something that Dan wanted to get into the film."

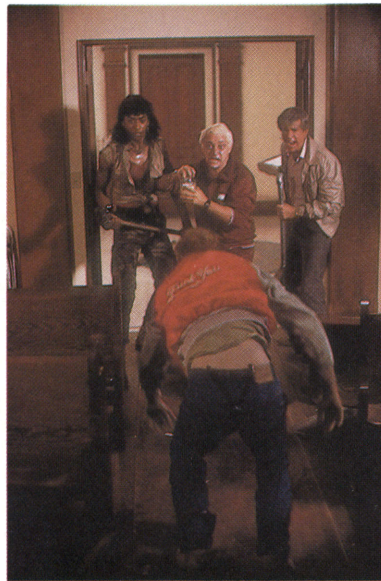
Stout's own enthusiasm for horror films was put to the test as he worked 16 to 18 hours per day, seven days a week for nearly five months designing virtually every set, costume, prop and effect for *Living Dead*. "Basically, as production designer, I was responsible for everything but the actors and the sound," he said. "The production designer works as the director's eyes, so this film is Dan's vision as visualized by me. Fortunately, Dan and I were right in sync from the start, so it never became a matter of my sacrificing any particular vision of my own to



get what Dan wanted." Stout found that his extensive comics background made turning out hundreds of storyboards, costume designs, corpse effect concepts and set designs much easier.

"In doing comics, you have to do a lot of drawing real fast, which is a lot like doing movies on paper. It's not a very large step to go from doing comics to doing storyboards, and if the sets haven't already been designed and built, you become the production designer too, because you've got to put the characters in your storyboards into a realistic setting."

Because cinematographer Jules Brenner loved the look of Stout's production paintings, he made an effort to translate their atmospheric quality to film. The two men shared a willingness to collaborate, which resulted in the frequent exchange of ideas as each looked over the other's shoulder. This intense working relationship is undoubtedly responsible for the fine balance Brenner was able to achieve between Stout's cartoon style and his own more naturalistic tone. Brenner, who is *not* a fan of the E.C. comics, allowed himself to be guided by Stout's illustra-



Tina (Beverly Randolph) tries to comfort her boyfriend, the late Freddy (Thom Mathews), in the deserted chapel. Below: After trying to kill Tina in the chapel, Freddy charges Spider (Miguel Nunez), Ernie (Don Calfa) and Frank (Clu Gulager). Brenner uses numerous POV shots for these sequences. Opposite: Zombies claim a victim.

tions, while still imposing his own style of motivated lighting and realistic composition, which added a harsh edge of truth to the fantastic events he photographed.

"When you start off with the notion that you're going to show people rising out of their graves and eating brains," said Brenner, "you've got to realize from the start that it's comic book material, and you can do almost nothing photographically and it'll come off that way. Though certain

Storyboard by Bill Stout maps out the sequence of *Trash's* resurrection



things were exaggerated, most of the film was shot within the constraints of reality at all times. I didn't do anything lighting-wise that would be unnatural. My lighting and my general approach have a great deal to do with what I observe in nature. I try to find ways to light things and people which will enhance the texture and the mood of the situation, but it's always motivated within reality."

Brenner, Stout and O'Bannon shared a dream that they could produce a film that looked like it cost \$10 million, even though the budget was many millions less. Despite numerous setbacks and the near disasters

that occurred almost on a daily basis during *Return Of The Living Dead's* eventful six-week shooting schedule, the creative team was grimly determined to make their dream come true. There were two major factors O'Bannon and his crew had to contend with, one of which was entirely unexpected and almost forced the production to shut down entirely. Two weeks before cameras were due to roll, the company that had contracted to build the sets and all of the mechanical makeup effects went bankrupt, leaving many sets and props unfinished. While Stout and his crew feverishly rushed to complete numerous unfinished sets

during the day, and another crew was hired to continue the set building throughout the night, makeup maestros Kenny Myers and Tony Gardner were brought in to complete the elaborate special effects puppets. Meanwhile, the crew continued shooting, utilizing the few standing sets and finished effects pieces.

The other factor which slowed production was that, even discounting the large amount of makeups required, the film relied heavily on many other kinds of special effects, including rain, fire, smoke, and people rising out of graves.

"The number of consistent special effects prolonged the shoot," observed Brenner. "We were constantly confronted with effects of all kinds, and the production was in their power. You can't rush effects, because you're trying to create an illusion. I tried to reach a certain level of believability in every case, and it's costly in time to do that. The problem is very familiar to anyone who works in film - there's never enough time. The film would've been a piece of cake, but because of all the special effects, we really could've used another two weeks. Time ran out almost on a daily basis."

Time also seemed to run out even from the earliest days of filming. The first two weeks of production consisted of rainy night shoots in a cemetery set, part of which was located in downtown Los Angeles. The other part was located in a Sylmar, California, olive grove. The fact that the tombstones and vaults were in one location, and the exterior gate and surrounding wall in another, created numerous photographic challenges for Brenner. There were discrepancies between the two which Brenner managed to eliminate in a subtle and effective manner. "I noticed that when we saw the city in the background of the downtown exterior set, there were yellow lights," said Brenner. "I suggested that we use that idea, and have yellow light present in the cemetery, which became a nice

visual element, bathing the punkers eerily before the horror began."

The rain, however, proved to be the most consistent difficulty O'Bannon and Brenner had to cope with. Unfortunately, the rain was an essential ingredient of the scenario, moving the story forward by transmitting the dread trioxin chemical into the cemetery soil.

"I should have used fog," O'Bannon said in retrospect, "but I had it in my head that I didn't want to be another person copying Ridley Scott, so I was grandly determined not to use a lot of fog effects. There were many times on the set that I wished I was shooting *My Dinner With Andre*. It was like a nightmare. I cursed myself for putting rain in the movie from the first night I had a rain shoot, when I realized how awkward the rain machines were, and how they had to be dispersed over half a block or more. Also, it doesn't look like rain until you fine-tune the positions, and the rain has to be backlit or you don't see it at all. Everytime you move the camera position, the rain set-up doesn't look good anymore."

"We actually bit off more than we could chew with the rain," added Brenner. "We had very wide shots downtown and limited rain equipment, certainly not enough for the scope of the shots, but we did the best with what we had. These were sequences that Dan felt very strongly about, and he had definite images in mind."

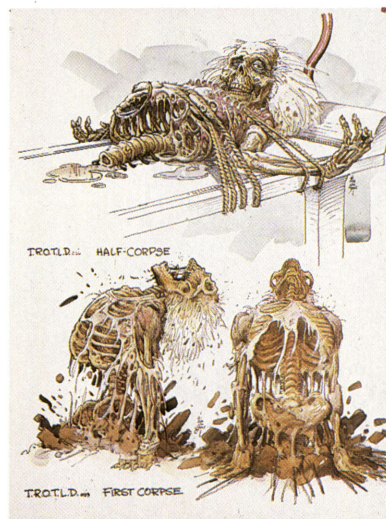
Shooting in the rain created further complications in the olive grove Stout had transformed into a Southern Gothic cemetery. The ground of the olive grove was bare dirt, on which the crew planted grass seed which was watered every day during the two weeks prior to shooting. A very tense situation arose when Stout realized that the rain had made a false hill very slippery, and the crew was ready to begin shooting a sequence where ghouls were to rise out of the hill.



The "half-corps" used in the film. Below: Stout's design sketches.

"The false hill was covered with mud and fake and real grass to disguise the trap doors the actors would climb out of for the shot," recalled Stout. "I got very worried when I noticed that the hill was very slick, and I felt that in the night and the rain we had the potential for a real disaster. I staggered all the trapdoors so that each of the actors would have a clear path, even though they appeared randomly placed. Then we devised a system where the zombies would come out in three waves. Before the shoot, I gave a pep talk to the extras, reminding them that they were in a dangerous situation, and I also convinced Dan that a lot of the corpses should crawl out rather than walk out of the hill. We pulled that shot off in one take, and I was very relieved."

Though the rain effects were difficult to achieve, the film



benefitted greatly from their inclusion, which allowed O'Bannon, Stout and Brenner an opportunity to have some fun with a highly cinematic ant hill shot showing how the trioxin chemical in the rainwa-



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ter permeated the cemetery soil and the coffins of the dead. The ant hill "set" was a box about four feet wide, built by Stout from his storyboards, and provided a two-fold challenge to Brenner, in that his camera had absolutely no leeway to the right or left—a slight pan in either direction would have revealed the edges of the "set"—and the camera had to drop down in sync with the flow of the water trickling into the coffin.

"What I filmed is a shadow of what I saw in my head," O'Bannon commented. "It's so diagrammatic and comic bookish, because in a comic book the artists don't have to draw everything as seen in real life. They are free to take liberties to communicate their stories." In utilizing this comic book sensibility, O'Bannon was able to anthropomorphize certain objects, like the trioxin chemical. "I enjoy making inanimate things into characters. I saw the chemical as a character in the film, so I let it act. Its motive, of course, was to get out and get on as many different corpses as it could. Whenever that chemical started floating around, I followed it." Since many of the corpse characters were either puppets or mechanical make-ups, this ability to instill objects with personality added another dimension to the film's antagonists.

Return Of The Living Dead's primary revitalized villains, the half-corpses, so named because its lower body is hacked off when it attacks the punk heroes in the mortuary, and the Tar Man, a decaying cadaver, required special and often quite elaborate photographic treatment in order to suspend audience disbelief. It was O'Bannon's intention that both characters appear highly surrealistic and cartoony, in keeping with the comic book tone of the film.

"When Ghastly Graham Ingels would draw corpses coming out of the grave for E.C. Comics," O'Bannon recalled, "they all had a particularly limp quality with lots of black shreds hanging off them,

and they wobbled on their feet. That's where the Tar Man came from." Though Tar Man's head was redesigned and rebuilt by Kenny Myers to conform more closely to Bill Stout's illustrations and to include cable-controlled movement for greater expressiveness, Myers and his crew had no time to redo the entire suit, which had been crudely assembled, and could not withstand a close-up. Fortunately, within the suit was Allan Troutman, an actor and mime who had the ability to move as if his bones weren't connected, who breathed life into the character.

"The Tar Man was marvelous," says Brenner, whose cinematography managed to hide the flaws in the suit, while bringing out the comic aspects of the drippy corpse. "One of the problems with that particular piece was that certain parts of the suit, like the ribcage, didn't look too realistic to the eye. In certain instances, I lit it in such a way that it would fall off into a darker range so that you wouldn't see it on film."

Conversely, in the case of the half-corpses puppet, built by 20-year-old Tony Gardner, the work was so fine that Brenner found he could photograph it in any degree of close-up and it would appear believable. Since the corpse was tied to a gurney for most of the film, all of its wires and cables were hidden underneath, along with the puppeteers who operated the mechanics. Problems arose in photographing the half-corpses because Brenner wanted to be able to show as much empty space under the gurney as possible.

"We had not prepared for the problem of hiding the puppeteers from the side," said Brenner. "We could've thrown anything over the gurney to hide them, but it wouldn't have looked right. We had to come up with something that was readily available, but which wouldn't cheapen the effect. As I recall, we used a stainless steel tray which looked like the stainless steel of the

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gurney, and I added some pipes and hoses to cover the areas where the puppeteers still showed through. I would not block off the whole area, however, because I wanted to show as much empty space underneath the gurney as possible. I wanted to make the puppet look impossible. Visually, you have to prove that there's no way to do it. One of the shots I loved in this sequence was a low-angle of the half-corpse on the table, with the end of her spine closest to the camera. It was my idea to have a little fluid just under the end of her spine to simulate oozing spinal fluid. You have to have a taste for these things, but I felt it helped the illusion. Sometimes the movement of her spine was perfectly coordinated with what she was saying and her efforts to lift off the table. Her spine would tighten and move a little bit, drawing a trail of spinal fluid, and I highlighted that with a light so it was very prominent. I just loved her. The puppet was exquisite. When you get something that is so finely designed, you don't have to hide anything, you want to show it to advantage, and we were able to."

Brenner was also allowed to show some fine camerawork to advantage throughout *Return Of The Living Dead*, a fact he attributes to the particular demands of the horror genre. "I like horror films very much," he said. "A cameraman always looks for opportunities to use the most dramatic aspects of the medium, and certainly horror allows you to get very dramatic in lighting and composition. This film was very attractive to me right away." Among the opportunities O'Bannon and Brenner seized upon was the use of subjective camera shots throughout the course of the film. This technique was applied to great effect in a scene in the chapel where one of the heroes, played by Thom Mathews, becomes one of the undead, much to his girlfriend's chagrin, and a cat-and-mouse game ensues across the pews. "That was fun," Brenner remarked. "I oper-



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ated the camera for this sequence. I first became the girl's p.o.v. on Thom, and then his p.o.v. on her. The actors were looking directly into my camera, and I became the other actor. I had to think like that actor at that moment, and, of course, emulate what they did. I carried the scene as far as I could. When the girl threw something at Thom, I actually had her stand behind me and throw the object into the frame at him. These things are kind of challenging and fun to do. It really gets such a strong identification going, and it really helps the pace of the film. The pace was great at that moment."

Since the release of *Return Of The Living Dead* in August, 1985, the public and critical response to the film has been enthusiastic, and both Stout and Brenner have been singled out for their contributions, while O'Bannon's directorial debut has received praise for its black comic style. O'Bannon feels that the macabre humor of the film is responsible for its appeal, and is quick to point out that his specialty "is being funny and not funny at the same time. I was born with a simultaneously jolly and bleak outlook on life, and I can see things from two perspectives at the same time. I can see things as simultaneously tragic and comic, and that's why I had fun doing this picture." O'Bannon also wanted audiences to have fun with his film. "It's a talk back picture," he said. "I made the film for a rowdy Friday night, when you go expecting to have a good time and yell and scream. It's sort of addicting, though. For my next picture, I hope to do something low key which demands a quieter house, and I don't know if I can stand sitting through it with an audience that doesn't yell and talk back. It's such an electrifying jolt of positive feedback." △

Ron Magid is a freelance Los Angeles writer.

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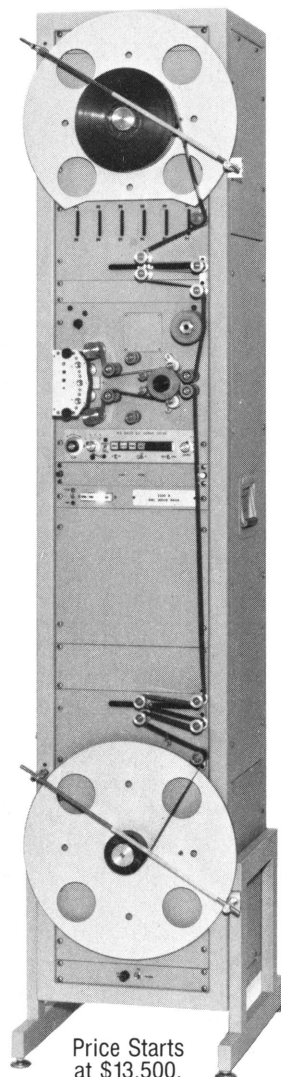
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Remembering How *The Bat* Whispers

by Michael H. Price and George E. Turner

RANKING ALONGSIDE Chaplin and von Stroheim as an individualistic and eccentric actor-producer-writer-director, Roland West made only a dozen features during his 15 years in the film industry. Numbers 10 and 11, filmed together during the late summer-early fall of 1930, were versions of the old Mary Roberts Rinehart - Avery Hopwood stage play, *The Bat*. One was made in the standard 35mm width and the other in a 65mm system called Magnifilm. Although they share a common storyline, the difference between the two is vast.

West, whose real name was Van Ziemer, hailed from Cleveland and was the son of a noted stage actress, Margaret Van Tassel. He was for

some years an actor, but by the time he was 18 he began devising vaudeville acts for other performers, specializing in crime playlets. In 1915, he formed a partnership with Joseph M. Schenck, then an executive of the Loew theater chain, to produce movies to be written and directed by West. With a capitalization of \$27,000 they made *Lost Souls*, which was bought by William Fox and released as *A Woman's Honor* (1916). It was amateurish, but their next, *Deluxe Annie* (1918), with Mrs. Schenck - Norma Talmadge - hit the mark. A stage play produced and written by West in 1918, *The Unknown Purple*, proved a popular hit as well. West by this time was quite wealthy and only made a movie or wrote a play when the fancy struck him.

In 1921 he returned to filmmaking with two crook dramas, *The Silver Lining* and *Nobody*, both featuring Mrs. West – Jewel Carmen. He hit his stride with the movie version of *The Unknown Purple* (1923), a fanciful tale of a scientist (Henry B. Walthall) who discovers the secret of invisibility. In the release prints, a purple glow was introduced to show the presence of the vengeful scientist.

The Monster (1925), starring Lon Chaney, and *The Bat* (1926), with Jewel Carmen and Jack Pickford, both were based on stage mystery-farces, which were much in vogue at the time. *The Monster* is the only one of West's silent films known to have survived. It is artistically designed and photographed (by Hal Mohr, ASC) and has much of the look of the German fantasy films of the period. *The Bat*, which apparently is one of the lost films, was designed by William Cameron Menzies, whose influence upon West was profound. It was photographed by Arthur Edeson, ASC (assisted by a youthful Gregg Toland, later ASC). Tantalizing descriptions suggest a strong German influence, especially in a pervading use of monumental shadows. In one scene a shadow, thought at first to be that of the master criminal called the Bat, proves to be that of a moth which has alighted on the headlight of an auto.

Similarly Germanic in appearance was West's last silent film, *The Dove*, (1928) with Norma Talmadge and Noah Beery, for which Menzies won the first Academy Award for art direction (in conjunction with his work in *The Tempest*). Cinematographer Oliver T. Marsh, ASC, provided strikingly mobile camera moves.

Alibi (1929), filmed on the United Artists lot in Hollywood in both sound and silent versions, brought together the team of West, Menzies; Hal C. Kern, an extraordinary film editor with whom West had developed great rapport; a highly imaginative special effects expert, Ned Herbert Mann, and – for the first time – the cinematographer whose style and imagination best fulfilled West's visions: Ray June, ASC. It also brought into the company the actor who interpreted the hero-villains of West's imagination to perfection: Chester Morris, whose sharp, angular features seemed a part of the world created for *Alibi*.

This police melodrama, which today seems in some moments as old-fashioned as a tintype and in others exceptionally fresh, is filled with oblique compositions, painted shadows, ingenious special effects, and swift, unconventional camera action. The latter was accomplished despite the fact that June and the camera were enclosed in a soundproof booth throughout. As a breakthrough in the combining of movies with dialogue successfully during the painfully difficult early days of the "talkies," *Alibi* is second only to *Bulldog Drummond*, which Samuel Goldwyn produced on the same stages a few months later.

Which brings us to *The Bat Whispers*, the team's *magnum opus* and (arguably) the *meisterwerk* of comedy-mystery movies.



The project was announced in January 1930 under the smokescreen title, *Love in Chicago*, and production began late that summer under the working title of *Whispers*. West denied the rumor that he was remaking *The Bat*, but it was seen subsequently that he had been less than frank about the project. Production proceeded in West's usual secretive manner at the United Artists Studio under sponsorship of his longtime partner, Joseph M. Schenck, then chairman of the board of United Artists.

There were three weeks of tests and rehearsals and seven weeks of shooting. Production wrapped early in October. Three edited negatives resulted: the domestic 35mm edition, a foreign version made up of out-takes, and the Magnifilm version. All have running times of about 85 minutes, and all three are still extant.

Menzies, who had become supervising art director for United Artists, was buried in work. West, therefore, obtained Paul Roe Crawley, an art director who had done some excellent designs for silent films such as *Beau Brummel* (1924) and *The Fire Brigade* (1927), but was then working as assistant and chief draughtsman to Menzies. He had also been assistant to the great Joseph Urban for two years, and possessed the same kind of flair and imagination as his masters.

Despite police vigilance, Gideon Bell (Richard Tucker) is murdered by the Bat. Syd D'Albrook, Wilson Benge and DeWitt Jennings find the body.



For *Bat* Crawley designed 110 sets ranging from small modular pieces to the enormous rooms, garden and grounds of a huge country mansion. These were constructed on two adjoining stages where all sequences but one were to be filmed. They were in outsize scale with high walls and massive doors. The garden, where the climax of the film takes place, was lined with box hedges 15 feet high. A bank burglary sequence was filmed at night in a Los Angeles suburban bank, but was lighted and photographed in such a way as to have the same larger-than-life, impressionistic quality as the studio sets.

The visual *motif* of the picture is one of shadows – gigantic, menacing black shapes that dominate almost every shot. Many of these were painted into the sets by an artist named Harvey Myers. Painted shadows were used in the German films as early as 1919 in *The Cabinet of Dr. Caligari*, a film which was deliberately made to resemble the paintings of certain expressionist artists. West had used painted shadows in several of his films, not (as has been said of *Caligari*) because of a shortage of lighting equipment, but to give the cameraman greater latitude in lighting sets and characters.

Ray June began his film career in 1914 at the Wharton Bros. Studios in his home town of Ithaca, New York, starting as a lab man. Before he was

20 he had become a cameraman, specializing in serials. He was also a master of special effects cinematography whose in-camera multiple exposure and matte work was much in demand. *Alibi* was the picture that moved him into the top rank of cinematographers and kept him at United Artists for seven years. June had the sort of resilience that made him an ideal man for a picture like *The Bat Whispers*, which demanded unusual inventiveness.

"One thing I always try to keep in mind: that a good cameraman must never let himself become willing to do things always in the same way," June once said. "It's one thing to develop an original style; it's something very different to let yourself fall into a routine and do things in routine fashion, just because it's easier or quicker." He also believed that "adverse conditions are a challenge to any cinematographer. Usually, if he meets the challenge with confidence, he'll come up with far better results than he had imagined. Many of the great achievements in cinematography have come about because of the more-than-usual hurdles that had to be overcome."

Robert L. Planck (later ASC) was brought in as second cameraman, but soon was reassigned as director of photography of the wide film version. He was 27 at the time. June called him "a very excellent man. Uses his head and is on the job all the



William Bakewell, on the lam, asks for a job as gardener. Spencer Charters, Maude Eburne, Grayce Hampton and Una Merkel are the inmates of the mansion.

time. I think he will be one of our outstanding cinematographers in a very few years." Stuart Thompson (later ASC) replaced Planck on the 35mm unit, with Bert Shipman as assistant. Stanley Cortez (later ASC), who had been assisting Hal Mohr at Pathé and Universal, seconded Planck with the Magnifilm camera. June acted as lighting consultant for the wide film unit.

The decision to film *The Bat Whispers* in a wide film version was solely that of West, who personally footed the bill for the extra costs. He purchased the camera, had a 65mm projector built, and installed a 38-foot screen on one of the stages. This screen supplanted its counterpart in the studio projection room, which was not wide enough to permit critical viewing of the 65mm rushes.

"Larger theaters are being built," a press release of September 1930 quoted West during production. Such theaters, West opined, "require larger screens because we have reached the last magnitude of the old 35mm film. If theaters enlarge the narrow film it loses its sharpness. The new 65mm film on a huge screen gives full detail. It also enhances the stereoscopic effect so that there is no distortion of the players to patrons sitting at the extreme side of a theater. The camera has the same range of vision as the human eye."

There is a question as to what 65mm camera was used. The 22 x 45mm frame size in the

existing negative is identical to that of the "Fearless 65 Superfilm camera," manufactured in Hollywood by Ralph G. Fear and introduced early in 1930. Planck devised a special viewfinder and a huge tricycle dolly, electronically controlled, for the camera.

Bill McClellan, chief electrician at United Artists, invented a new variety of scissors-type lightning machines which were installed in soundproof booths on wheels. These were considerably larger than the machines then in use because of the necessity of throwing bolts across the broader areas of the wide film shots. McClellan also installed lighting dimmer panels equipped with automatic electric stopwatches which were widely imitated at other studios.

For a chase in which the camera races behind running players, the team of June, Planck and studio technician Charles Cline rigged the longest indoor trolley shot that had been made up to that time; the camera runway was 300 feet long and cameras were suspended on steel cables 30 feet in the air. For \$400, Cline built a contrivance to *zoom* the camera rapidly from vantage points ranging from eight inches to six feet above the floor. It was mounted on a light truck 24 feet long and was remarkably silent in operation.

The numerous unusual miniature shots that are interspersed throughout were planned by Ned Mann, a former artist and professional auto racer

Chester Morris, as the abrasive detective Anderson, spies on Una Merkel. Below: Gustav Von Seyffertitz gains the advantage over Morris.



who had entered films as an actor about 1920. He gravitated toward the special effects field, and in 1926 created many of the celebrated fantasy scenes of Douglas Fairbanks' *The Thief of Bagdad*. The miniatures for *Bat* were photographed by two specialists often associated with Mann, Edward Colman and Harry Zech (both later ASC). Like most leading effects cinematographers of the time, Colman began his career filming comedies. He had been with United Artists as first "trick cameraman" (the designation of the period for special effects cameraman) since 1927. Zech, who Ray June called "one of the best miniature and trick men in the business, which he proved on *Hell's Angels*," had worked in this field for nearly 20 years and was one of the first specialists in projection process photography.

There is almost no music in the film, only a dance tune heard on a radio and a romantic theme for the end titles. However, UA's distinguished musical director, composer-violinist Hugo Riesenfeld, lent his expertise to the sound department as a consultant. West was determined that whatever sounds were heard would have meaning and that there would be none of the non-stop dialogue and non-selective noises that were cluttering most sound tracks of the time.

The play and novel *were* heavy on dialogue. For this and other reasons, West rewrote considerably for the screen adaptation. Beginning with some



The eccentric Spencer Charters and the harried Billy Bakewell try to reason with the inefficient private eye, Charles Dow Clark.

dizzying miniature and full scale effects that create a strange impression of a big city at night, the picture then shows policemen arriving at a downtown building . . .

The Bat, a master criminal, has sent a note to Gideon Bell (Richard Tucker), millionaire gem collector: "Greetings, Mr. Bell. If you will be in your library alone at 12 o'clock sharp tonight it will prove your nerve . . ." Police gather at Bell's skyscraper apartment to protect him. The Bat addresses them over the radio: "Don't waste time chasing rainbows, because I always get what I'm after." As the clock strikes 12, the Bat lowers himself from the roof, strangles Bell at the window of his library while the police congratulate themselves in the sitting room, and escapes with valuable jewels.

Next night, the Bat is about to lower himself through a skylight of the Oakdale Bank when he spots another looter inside. The rival stuffs \$500,000 into a satchel and escapes. The Bat pursues but loses the burglar at the Courtley Fleming estate. Fleming, president of the bank, is vacationing in Europe and has leased the country mansion to Mrs. Van Gorder (Grayce Hampton), a wealthy recluse. Other residents are her niece, Dale

(Una Merkel); her silly maid, Lizzie (Maude Eburne), and an eccentric old caretaker (Spencer Charters).

Soon the occupants are disturbed by odd noises. A disembodied voice warns them, "Get out of this house while there is still time. Those who remain face terrible consequences." Brooks Bailly (William Bakewell), a bank cashier under suspicion in the burglary, is engaged to Dale; she persuades her aunt to hire Bailly as a gardener so the police will not find him.

The occupants, having seen the Bat at a window, feel certain the money is hidden in the house. Mrs. Van Gorder hires a private detective by telephone. A Dr. Venrees (Gustav Von Seyffertitz) arrives to tell Mrs. Van Gorder that he has a cable from Fleming requesting that the place be vacated before Fleming can return from Europe. She refuses to leave.

Dale and Brooks know the mansion contains a secret room. Suspecting that the bank money is hidden in the room, they search for blueprints which would show its location. Richard Fleming (Hugh Huntley), nephew of the banker, arrives and finds the blueprints. He refuses to give them up. Dale threatens him

Bakewell finds Charters hard to deal with. Below: Morris lets Clark and Charters know where they stand.



with her aunt's revolver, but abruptly a shadowy figure appears and shoots young Fleming. Dale has torn half the blueprint page from the dead man's grasp as the Bat escapes with the rest. She hides it.

A man arrives and introduces himself as Detective Anderson (Chester Morris), on the trail of the Bat. Jones (Charles Dow Clark), the detective Mrs. Van Gorder hired, also arrives and proves to be an incompetent bumpkin. Anderson suspects Dale in young Fleming's death, but Mrs. Van Gorder prevents her arrest. When Anderson obtains part of the blueprint, Venrees slugs him and locks him in a closet.

A dazed, bedraggled man (Ben Bard) wanders in and collapses. Meantime, Lizzie sets a bear trap in the yard.

In the attic, Dale chances on an entrance to the hidden room. A cloaked figure crosses the roof. In the room, Dale sees the Bat trying to open a safe as the secret panel swings shut, trapping her. The Bat stalks her, whispering, "Quiet! Quiet! Not a word, not a sound! I'm gonna getcha, do you hear? Stand still till I put my hands around your lily white throat and squeeze and squeeze until you're dead!" Meantime, the cloaked figure enters, opens the safe, and takes out a satchel containing the missing money. As the Bat turns to attack the intruder, Dale escapes. Returning, Dale and her friends find the body of the cloaked man, who is the bank president, Fleming (S. E. Jennings).

Anderson reappears, locks Venrees in the closet, and goes to investigate the secret room. Mrs. Van Gorder and Dale find the bank funds hidden behind a hamper.

Outside, the garage bursts into flame. The dazed guest regains his senses, points a revolver at the householders, and tells them the Bat has set the fire to lure them outside. He bids them to place the loot on a table, to turn out the lights, and to "Get back - back into the shadows . . . And remember, he's a killer." As the Bat enters and reaches for the satchel, the man covers him with the gun. The Bat leaps out the window and almost reaches safety when Lizzie's bear trap closes on his leg. Unmasked, the fiend proves to be the supposed Anderson. The Bat had overpowered the real Anderson - the dazed "unknown" - and had taken his place to get into the manse.



Clark covers Von Seyffertitz while Morris claps on the cuffs.

Tied to a tree, the Bat whispers: "I've got the greatest brain that ever existed . . . Now you think you've got me, eh? There never was a jail built strong enough to hold the Bat. And after I've paid my respects to your cheap lock-up, I shall return, at night. The Bat always flies at night - and always in a straight line." As he laughs insanely, Lizzie faints.

In an epilogue, the Bat slides down a rope onto a stage and emerges from a puff of smoke as Chester Morris, who implores the audience not to reveal the Bat's identity. Otherwise, "he's heartbroken . . . he goes around for days killing people without the slightest enjoyment for his work."

Virtuoso cinematography, vast sets and fantastic miniature work make *The Bat* *Whispers* the most spectacular of the many similar comedy thrillers made during the silent and early sound periods. The sets dominate the actors, who (in the standard version) appear often in the lower part of the frame as tiny figures dwarfed by looming shadows. The Bat himself, in flapping black cape and cowl (looking very much like a famed cartoon hero he may well have inspired) slithers in and out of darkness like a shadow incarnate. Sometimes he is seen in silhouette as he slides down a rope from Mr. Bell's townhouse or is limned by flashes of lightning as he crouches in treetops, leaps upon a victim, or glides toward the house. In one shuddery scene he crawls along the floor and again he is glimpsed crouching over a

corpse like some giant, deformed rodent. He is backlit in the scene in which he shoots young Fleming on the stairs. Often only his shadow is shown, flitting hugely across the facade of the Oakdale Bank, creeping along the walls of the house and bleeding in and out of other shadows.

The Bat's most frightening appearance occurs when Dale is trapped with him in the secret room: His shadow appears on the wall, wings outspread. The wings fold as the shadow shrinks and changes shape until it become a black puddle on the floor and lower wall. Then the Bat himself emerges, stalking erratically toward the camera (in the 35mm version) and becoming increasingly larger until only his eyes fill the frame. The sounds of thunder and the sinister whispering of the Bat add to the genuine terror of the scene.

The miniatures are carefully intercut with full scale action and in some instances linked by camera movements. The opening shot of the film is a clock tower; the camera pulls back to show an expanse of city at night against a turbulent sky. The camera then looks down the front of a towering building and abruptly hurtles down towards the street and its moving cars. The camera halts and tilts to a live action cut of police headquarters and live actors and real autos. Later, as the police arrive at the Bell townhouse, the action blends into a miniature shot as the camera wings swiftly



"The Unknown" (Ben Bard) isn't as dazed as he had seemed. Below: An actual frame from the 65mm negative showing part of the cast crawl. (Courtesy Robert Birchard)



up the face of the building and into Bell's open window on the top floor. This cuts almost imperceptibly to a full scale shot in which the camera races across the room to look over Bell's shoulder at the note he is reading at his desk.

There are more striking miniatures: the camera rides atop a model locomotive as it speeds into the outskirts of a miniature city; it follows an auto chase through the woods in which the the Bat releases a smoke screen to baffle his pursuers; it flies over the

grounds of the Fleming estate and into the house, moving through the hallways; it watches the burning garage as seen from the main house.

There is little attempt at stark realism in any of this. The lighting, which is purely dramatic with hardly a thought of the practical, the startling camera moves, the oversized sets and props, and even the stylized acting of the principals, all add up to a picture which creates its own form of reality, much as *Citizen Kane* did a decade later.

Dialogue of the stage original was pared to such a point that when the actors *do* speak, their voices sometimes startle. The chiming of a tower clock accompanies the opening titles and the soundtrack abounds with such unnerving sound effects as thunder, creaking doors, and a cannonball bouncing down the stairs.

West's strongest feature was his visual sense rather than his handling of actors. Nevertheless, Chester Morris is very much the central figure of the show, giving an effectively overplayed performance. (Incidentally, Morris was never satisfied with his acting in the three pictures he made for West). The picture also

owes a great deal to the calm assurance of matronly Grayce Hampton; to the eccentric comedy of Maude Eburne, Spencer Charters and Charles Dow Clark; and to such menaces as Gustav von Seyffertitz, Ben Bard, and Hugh Huntley. Una Merkel, seen here as an attractive ingenue, was later to prove that her real forte was comedy.

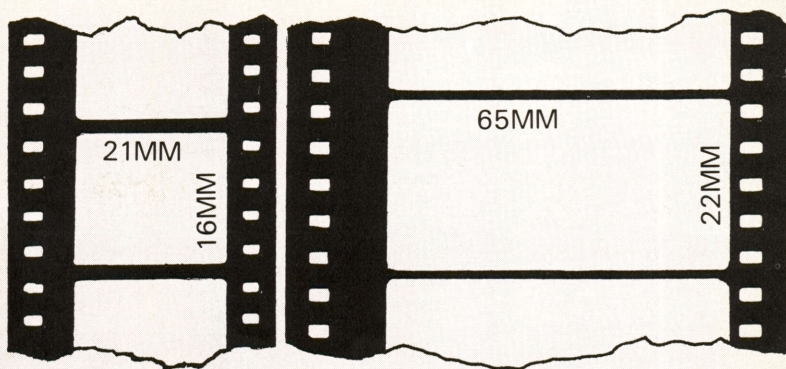
Although United Artists publicized *Bat* as "the first picture taken with extra-wide film," there had been isolated experimentation with 42mm, 56mm, 65mm and 70mm formats. Efforts to popularize wide film began in earnest late in 1929 at Fox, MGM, RKO-Radio, Paramount and Warner Brothers, which altogether produced only a handful of wide film features and a few short subjects. Although some, such as Fox's *The Big Trail* and MGM's *Billy the Kid*, were impressive, boxoffice returns were negligible because fewer than 20 theaters, all in key cities, ran them.

Bat is United Artists' only wide film picture of the period and the only one to address a mystery theme prior to the re-emergence of large format presentations in the 1950s. West's ideas were unique among producers who used wide film as a means to glorify the spectacular. He saw instead an opportunity to heighten realism and intimacy by showing life-size players. The frame depth of the 65mm film was only slightly greater than that of the standard 35mm, being five perforations deep instead of four. It presented an aspect somewhat similar to that of the stage when shown on the recommended 30-foot plus screen.

Because of the difficulty of trying to photograph miniatures in large format using film of very low sensitivity, the miniature shots from the 35mm version were optically enlarged for use in Magnifilm. The coarse grain and soft definition of these scenes robs them of much of their effectiveness. Once the camera is inside the mansion it remains static, like some unseen eavesdropper. There are no cuts to closeups; figures are kept full-length throughout. The camera cuts away only when the scene shifts.

Action slows occasionally because of the necessity to play scenes through without editorial cheating. This absence of editorial control, in turn, speeds up some of the action through elimination of the usual inserted reaction shots. The matter of depth of field creates another variation, the generally sharp, deep focus technique of the standard version giving way to a shifting focus approach more typical of the era.

Theater owners as a rule failed to share West's enthusiasm for a process which would have called for any more expenditure than already had been poured into the conversion to sound. The thought of remodeling and adding special projection equipment was appalling at a time when theaters in alarming numbers were closing. Exhibitor hostility doomed the wide film concept while it was still in a fetal state. The Motion Picture Producers and Distributors of America delivered the *coup de grace* on December 16, 1930 when it forbade the industry "by word or gesture" to cause "the public's curiosity to be aroused about any new invention for at least two years."



Actual dimensions of 35mm and Magnifilm frames.

The standard version remained in release throughout the Thirties and Forties, first via Schenck's Artcinema Associates, then by Atlantic Pictures and, later, Astor Pictures. R. M. Savini, who headed these re-release companies, "streamlined" (as he termed it) *Bat* to 71 minutes.

The cinematographers and most of the technical crew went on to further triumphs in motion pictures. West, who said he had lost interest in making movies, made only one more picture, *Corsair* (1931), with Chester Morris and Thelma Todd. Unfortunately, he is remembered more as a principal figure in the unsolved mystery surrounding the death of Miss Todd in 1935 than for his screen contributions. West died in 1952. △

Price and Turner's 1979 book, Forgotten Horrors: Early Talkie Chillers From Poverty Row, is being reprinted by Eclipse this spring. The book covers a vast number of this genre from the Thirties.

The Bat Whispers Released through United Artists

A Feature productions-Artcinema Associates production; presented by Joseph M. Schenck; produced, directed and dialogued by Roland West; based on the stage play, "The Bat," by Mary Roberts Rinehart and Avery Hopwood, which was produced by Wagenhals & Kemper; photographed by Ray June, ASC; settings designed and executed by Paul Roe Crawley; film editor, James Smith; sound technician, O.E. Lagerstrom; assistant director, Roger H. Heman; dialogue director, Charles H. Smith; in charge of sound, J. T. Reed; sound and music consultant, Dr. Hugo Riesenfeld; production assistant, Helen Hallett; makeup artist, S. E. Jennings; paintings by Thomas Lawless; scenic artist, Harvey Meyers; electrical effects, William McClellan; special technician, Charles Cline; assistant cameramen, Stuart Thompson, Bert Shipman; special photography, Edward Colman, Harry Zech; running time, 85 minutes; released November 13, 1930.

Special Credits-Magnifilm

Wide film photography, Robert H. Planck; supervisor of photography, Ray June; film editor, Hal C. Kern; assistant cameraman, Stanley Cortez; running time, 85 minutes.

Players (in order of appearance): Police Lieutenant, Chance Ward; Mr. Bell, Richard Tucker; The Butler, Wilson Bengie; Police Captain, DeWitt Jennings; Police Sergeant, Sydney D'Albrook; Man in black Mask, S.E. Jennings; Cornelia van Gorder, Grayce Hampton; Lizzie Allen, Maude Eburne; The Caretaker, Spencer Charters; Dale van Gorder, Una Merkel; Brooks, William Bakewell; Dr. Venrees, Gustav Von Seyffertitz; Detective Anderson, Chester Morris; Richard Fleming, Hugh Huntley; Detective Jones, Charles Dow Clark; The Unknown, Ben Bard.



Aerials for *The Iron Eagle*

By Nick Dager

One of the first production decisions made about Tri-Star Pictures's release of *Iron Eagle* was that the use of miniatures would be kept to an absolute minimum, this despite the fact that as much as 40 percent of the film takes place in fighter jets flying at speeds of up to 400 miles per hour. The task of filming those aerial sequences fell to Frank Holgate, a Los Angeles-based cinematographer whose credits as director of aerial photography include *Blue*

Thunder, *American Flyer*, and *Cocon*, to name but a few.

Iron Eagle tells the story of an American Air Force officer who is taken hostage by an unfriendly (and unnamed) Middle Eastern government. The man's son (played by Jason Gedrick) and a retired Air Force officer (Lou Gossett, Jr.) team up to stage an aerial raid on the base where the father is being held prisoner.

After months of negotiations with the Israeli Ministry of

Produced by Ron Samuels & Joe Wizan
 Directed by Sidney Furie
 Adam Greenberg, director of photography
 Frank Holgate, aerial photography

Defense the producers were able to win permission to film at an Israeli Air Force base in the desert. Although the desert itself posed potential problems – including daily temperatures of 130 degrees Fahrenheit – all in all the shoot proceeded smoothly.

“Keeping the cameras clean was not a problem,” says Holgate. The crew had a seven-ton air-conditioned grip truck at its disposal which helped in that regard. Still the shoot lasted more

than two months prompting Holgate to say, "I think I spent enough time in the desert to qualify as a Bedouin."

The natural conditions were not the only obstacles facing Holgate and second unit director Jim Gavin. (*Iron Eagle* is directed by Sidney Furie.) While the Israelis were reportedly extremely cooperative, the Middle East is still a battle zone and the filmmakers faced many restrictions. Understandably, security was extremely tight and the crew had absolutely no freedom of movement. Added to that was the fact that they were only allowed to shoot daily maneuvers, none of which lasted longer than 15 minutes. "In effect," explains Holgate, "we could be there but we couldn't interfere." (The realities of the situation were never so apparent as on the day during the shoot when production was halted temporarily so that the jets being filmed could make a bombing raid on Lebanon. When the raid was completed, filming resumed.)

Despite all of this, Holgate has nothing but praise for the Israelis and is quite pleased with the results of the desert shoot. It is a cliché to stress the importance of pre-production in this kind of project but clearly pre-production was absolutely essential in this case. Shooting aerial sequences requires total coordination, says Holgate, "And there were many meetings to get that coordination." Among those sessions were meetings with the pilots who were flying the jets and meetings with Furie and Adam Greenberg, director of photography, to determine the kind of footage Holgate and Gavin were to get and just how that footage should look.

Holgate says the main objective was getting what he calls "a full negative" and for that the desert offered one built-in plus. "The light was a constant f22," says Holgate. "I never changed exposure." He shot Eastman Kodak 5247 rated at 64.

"We had four basic situations to film from," he continues: 1, from inside a jet; 2, from a

mount outside a jet; 3, from a helicopter; 4, from the ground."

Holgate used an Arriflex III inside the jet. "We took the emergency exit out and mounted the camera in the seat track," he explains. "We were able to reach out from there with 25-250s." Holgate shot with Angenieux zoom lenses and Zeiss primes. He used a lot of long lenses, often shooting with a 500.

An Arri III was also used for the camera mounted on the pods beneath a jet. "We tested 'em (the Arris) up to 9 Gs," says Holgate and the cameras came through with, well, flying colors. So much so that Holgate feels that



Takeoff preparations. Left: Close-up of Gedrick in cockpit. Below: Cameraman Holgate. Opposite page: Crew at work as Kedrick prepares to fly the "snake".

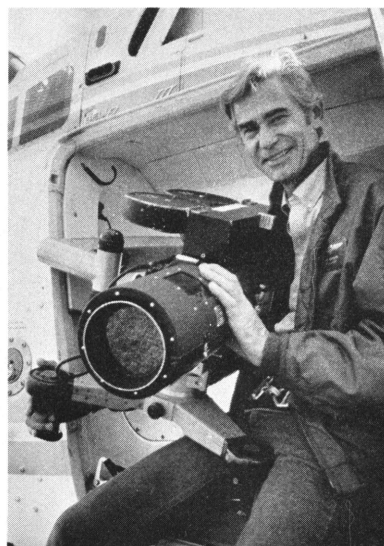


Photo by Steve Holgate

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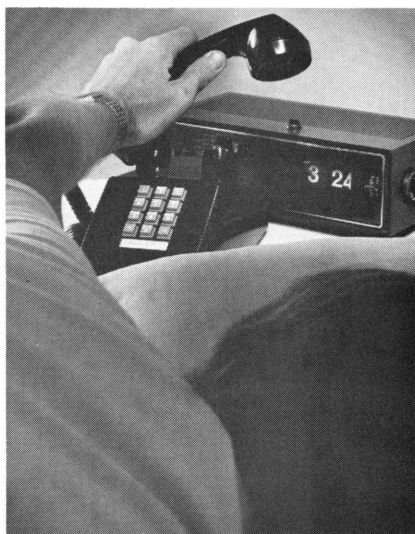
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the footage shot from outside the jets looks "too good. People are going to think those shots are miniatures." The mounted cameras held up throughout the shoot and, according to Holgate, the only mishap with equipment in the two-month production period was the loss of a filter that fell off a camera.

For the shots from inside a helicopter Holgate used a Mitchell Mark II on a Tyler Major Mount. His ground camera was another Arri III mounted on an O'Connor head. Holgate says one trick he has developed shooting aerial footage is to leave his camera somewhat loose on the O'Connor head so that he is free to adjust the level himself by eye as he sees fit.

One of the greatest challenges involved in shooting aerial footage these days, Holgate believes, is dealing with the audience's memories of the classic dog fight films of World Wars I and II. Modern jets fly at speeds approaching 400 miles an hour, much faster than the planes flown in either world war. Says Holgate, "They're moving so fast that it's difficult to keep them in the picture and tell your story."

Often, Holgate concedes, when he was shooting the jets in *Iron Eagle*, "I couldn't see them. At least I couldn't see them in camera." There were measures he took to insure that, despite the fact he often couldn't see a jet that was closing at 600 feet a second, he could still be confident he was getting a usable image on film. As he puts it, "You have to know instinctively. It can get frustrating."

The first step Holgate would take was to map out where the jets were going to be so that, even if he couldn't see them in camera he had a reasonably accurate idea of where they were or were supposed to be. Secondly, he would mark his camera position with smoke grenades to let the pilots know where *he* was. Thirdly, he would often shoot with one eye on the sky and one eye in the viewfinder. And, he admits, he sometimes shot without even looking into the camera.

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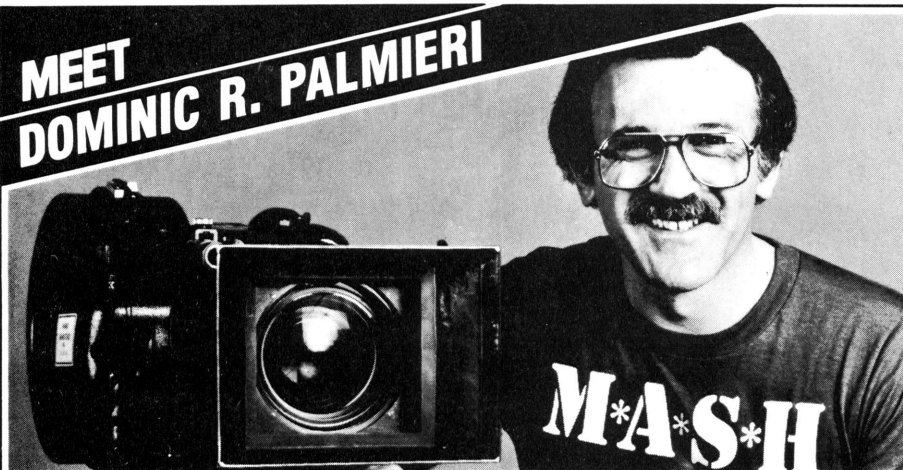
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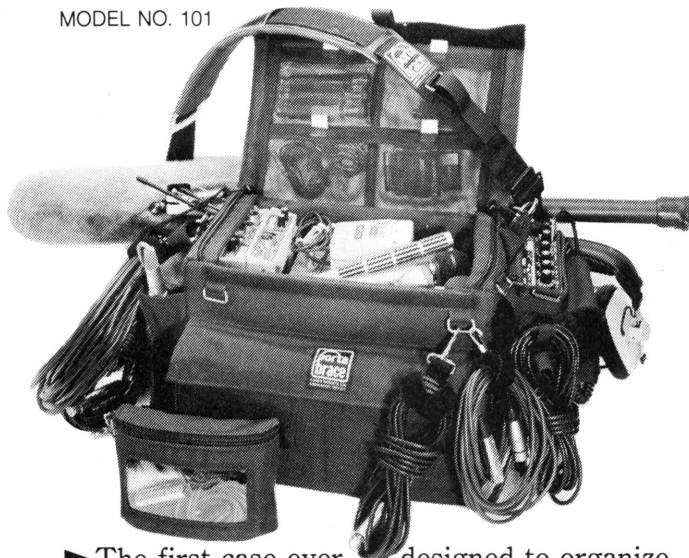
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Holgate says he averaged about 2,000 feet of film a day which compares favorably with his normal average in the states of between 600 and 1,000 feet a day.

For all his satisfaction with the project, Holgate says there was one minor disappointment. "We tried to do something else that never did work," he recalls. That "something" was shots from a camera mounted inside the cockpit of a jet for over-the-shoulder views and head-on pictures. Normally for that situation Holgate says he uses a Bell & Howell GCAP camera. The camera is small and lightweight and runs on 28 volts of battery power. "Every once in awhile I'll mount one on the wing of a glider," he says, adding that the problem in Israel was one of engineering. The Israelis were worried that should a pilot have to eject, the GCAP camera might become a lethal projectile. Holgate was sympathetic with that outlook, saying, "That was a distinct possibility." (He says those in-cockpit shots were done in the Mohave desert using a private jet and an Arri III.)

Scenes using miniatures were also being shot in the states but those were kept to a minimum, something that pleases Holgate. In the first place, he says, "the models cost more" than shooting live action. Secondly, and more important, even well done miniature scenes run the risk of looking fake and the audience today is much too sophisticated to accept that. Says Holgate, "The majority of the people will recognize (miniatures). Once you insult them, you've lost them."

After his work on *Iron Eagle* Holgate went on to serve as director of photography for the Warner Bros. pilot film for a proposed television series, *I Had Three Wives*. Holgate says he will continue to shoot aerial footage but, like most people, he wants the chance to handle all kinds of assignments. "Although I specialize in helicopters and I love to fly," says Holgate, "I don't want to be pigeonholed." △

Nick Dager is a New York-based writer.



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Crossroads – Where You Deal With Old Scratch

by Nora Lee

Music is your own thoughts, your experience, your wisdom. If you don't live it, it won't come out in your horn.

... CHARLIE PARKER

Charlie Parker was talking about jazz, but the blues are the soul of jazz and living your music is the soul of the blues – and a new film *Crossroads*. The film gets its title from a Mississippi Delta blues legend that you can deal with the Devil if you meet him at the crossroads. He gets your soul and you get fame and fortune.

Eugene Martone (Ralph Macchio), a prodigy at the Juilliard School of Music in New York, knows all about the blues. He read about them in a book. Young, white, thoroughly New York and up to his ears in classical guitar training, Eugene believes he is really a bluesman. To make his mark in the blues, he wants to find and record a lost song composed by his hero, the legendary Robert Johnson. To do it, he needs the help of Willie Brown (Joe Seneca), Johnson's friend and fellow bluesman. First, he has to spring Willie

from a New York rest home for criminals.

This unlikely pairing is exactly what attracted cinematographer John Bailey, ASC, to his latest film. "There is only so much an hour and a half or two hours can deal with in terms of story or relationship. A lot of times I have felt that just a one-on-one – a very simple character interaction – is the strongest and most satisfying experience. Simplicity is especially important for an intimate film that doesn't have any large scale action or external drama to it.

*Produced by Tim Zinneman
Directed by Walter Hill
John Bailey, ASC, director of photography*

"That was the thing that appealed to me right away on *Crossroads*. Not only were they two very compelling characters, but it was an unexpected relationship. You would not think that a brash, smart-talking, Manhattan white kid and a Southern black bluesman would have anything to say to one another. One of the great satisfactions of the film is to see these totally different people come together, interact, become very close and both of them be fundamentally changed by the experience," said Bailey.

Relationships, drama, interactions – these things are what John Bailey looks for in a script. He wants a good story well-suited to cinematic art. His filmography offers some examples. The story can be realistic and intimate like *Ordinary People* and *The Big Chill* or it can be surrealistic and intimate like *Cat People*. It can be a rip-roarin', action packed western like *Silverado*. Or it can be the unforgettable tale of the life and death of a Japanese writer – *Mishima*.

Bailey's interest in what might be termed the literary aspects of a script are probably a result of his early training in literary criticism. He thought he wanted to be an academician, but film introduced him to a "new language" and he decided to study cinematography. He graduated from the University of Southern California School of Cinema in the sixties.

There were other intriguing aspects of *Crossroads* for Bailey. For one thing, he is a fanatic about blues music. As he recalls, "We were doing *Silverado* at the time and Shel Schrader, an executive at Columbia, told me about the project. We were talking about the blues one day and I told him how much I liked the blues. He said that Columbia had a project about an old blues singer and I asked who was doing it. He said, 'Walter Hill.'

"Well, I've known Walter for years – mainly through John Fiedler – and John, Walter and I



had all talked about being involved in a project together. I always wanted to work with Walter. I really respect him. He is a very intelligent, articulate man. His films have tended to be real macho, action films (*Hard Times*, *The Driver*, *The Warriors*, *The Long Riders* and *48 Hrs.*) which don't reflect his personality or a large part of his temperament at all. I had hoped that something would come along that would be the kind of film I would like to do and that would be something different for Walter. *Crossroads* was just a perfect combination of elements.

"I flew back from Santa Fe one Sunday morning during *Silverado* just to meet Walter and talk about the script. We were shooting the next day so I had to fly out again, but I really wanted to do this project. We had breakfast together and we spent the whole time talking about the blues. I didn't know he was such a blues fanatic and he didn't know I was such a blues fanatic. We both had this common love of a very particular kind of music and of particular musicians. We both were fascinated by the Robert Johnson

legend and while this film is not specifically about Robert Johnson, he certainly is one of the motivating elements."

Principal photography for *Crossroads* began in April 1985 on location in Mississippi near the town of Greenville and in the surrounding towns of Beulah, Winterville, Bolivar, Murphy and Chatham – all just off Highway 61. Willie Brown has come home and it was important to Hill and Bailey that Mississippi have a "time remembered" quality. No gritty realism. Hill described the visual style as romantic; Bailey refined romantic to mean "nonrealistic . . . maybe a slight elegiac quality."

"I never wanted it to look seedy or grimy," Bailey said, "and there were plenty of opportunities. Down in Mississippi we shot in some very impoverished areas. Our set designs were very funky – the motels they stayed in, and the practical locations, the barn, the deserted house – all of those locations could have looked fairly unsavory. I really didn't think that was the point. It was not so much the literal reality of the physical place they were in, but the emotional connection between the characters.

Macchio, Seneca on the road. Opposite page: the bluesman, Seneca.



*Seneca, Macchio
meet Robert Judd
(Scratch).*

"I thought that it should look *credible*, but that you should not feel that there was a real sense of lower depths or that we were trying to make an economic or political statement by virtue of the way things looked. That was not what this story was about – it was about blues and a spiritual encounter and a spiritual transformation. To have that theme stuffed into a package that was very frayed would have created a certain conflict. I didn't want it to look down and dirty," he said.

Although Hill and Bailey wanted Mississippi to be very sunny, sharp and clean, they often had to cheat the look. The humidity in the Delta is high enough that there is often lingering ground fog in the morning and hazy overcast afternoons. The wind blows, too, and the light had an unexpected in-and-out quality. But the shot of Eugene and Willie arriving in Mississippi set the stage for the rest of the Delta sequences, and did it in a style that Bailey is particularly fond of.

"It's a high-angle shot of Highway 61 and the road curving around. This chicken truck they are riding on comes up and stops

in the middle of the road. It is a wonderful shot that says 'Mississippi Delta' right away. You see the plowed farmland, the bright sun, the empty two-lane highway. You can feel the heat and the presence of the land very strongly.

"I like high angles. I don't think they play well for drama, but they play well for orientation. They are very geometric. They have beautiful lines. You are essentially shooting down into a floor and compositional elements become very, very strong. Things become more abstract. When you shoot down on a chair or a table it is no longer just a chair or a table. It is a square or a circle or an oval.

"Art has a tremendous influence on me. I don't tie every shot to a particular painting, but I am feeding off art all the time. I love abstract geometric art from the period of the Russian *avante garde* or the German Bauhaus. Whenever I have the opportunity to find what is essentially an establishing shot that has a strong formal abstract element to it, I like to do it. I like the visual imagery and I think it is good orientation for the audience. It is an arresting way to get into a scene.

"The German Bauhaus experimented with a lot of those extreme angles – shooting from on the ground straight up – people on ladders, people on balconies of buildings. Particularly people like Moholy-Nagy, Humboldt, and Kertesz shot straight down from balconies into the park, into city squares, into streets and you sense a tremendous amount of geometric abstraction in their work.

"We cinematographers spend 90% of our time shooting into walls. Usually it is a face up against a wall. We like the face a certain way and we like the wall a certain way – there are only so many combinations. If you can get the camera up in the air a little it can be very arresting."

Bailey continued, "Orson Welles went to the other extreme and put the camera on the ground. Unfortunately it can have a strong emotional effect. It tends to be very sinister. We did use a couple of extreme low angles. In fact when Willie and Eugene finally arrive at the crossroads after the shot in the rooming house, it is a very low angle of the road. The road dropped down about four feet below the level of the actual crossroads – which was a crest. So I put the camera on a high hat. We originally had it on a pair of sticks, but then I saw I could actually get down there on the ground. The crest of the road almost cut even with the horizon line. I didn't want to lose the horizon completely because that would have been too abstract.

"We just see the crest of the road and a tiny horizon. That meant that nine tenths of the frame was bald sky against the tree. We, as an audience, know what that tree means. Willie has talked about it and we have seen it in his crayon drawings. Then the car pulls into frame, stops and Willie and Eugene get out; the car drives out of frame and they stand there. The tree is on the extreme left side of the frame and they are on the extreme right. Walter and Freeman (Davies, the editor) let that shot play a long time – much longer than necessary for an estab-

lishing shot – because they wanted the audience to feel, ‘We are here.’ We are more than here, we are really HERE.”

Crossroads is in many ways a rite of passage film, and not just for young Eugene. There are several sequences of Willie Brown’s youth and Robert Johnson’s meeting with Scratch at the crossroads. To separate their stories from Eugene’s, these biographical pieces were shot in black-and-white. Bailey is becoming something of an expert in black-and-white photography. Last year he was the director of photography on *Mishima* and the biographical sequences in it were also shot in black-and-white. He admitted that before *Mishima*, his last black-and-white film was in film school.

Bailey shot on Plus-X stock, much as he did for half the black-and-white footage in *Mishima*. However, once the film was cut into the color portion some problems developed. When a work print of the film was screened in January, a definite decision on how to handle the black-and-white sections had not been made. Bailey commented on how the black-and-white footage looked in the rough cut.

“Walter and Freeman felt that the black-and-white sections had too much presence and clarity. So they duped the dupe. Normally when you dupe film it builds up the grain. The grain and the added contrast makes it look like an old movie. However, since I shot all that stuff on Plus-X, even though they duped it, the grain is just not there. So the film has a very strange look. It doesn’t quite look like old duped footage, so I am not quite sure that it works.

“The opening sequence of Robert Johnson at the crossroads was originally shot in color, so when that was duped and desaturated you could see the grain in the stock because 5247 is actually much grainier than the Plus-X. If I had anticipated the dupy look, I probably would have shot on 4X film like *Strangers in Paradise* was, so that it would



Jami Gertz, Macchio, Seneca. Center: *The jook joint*. Below: Macchio, Seneca, Frank Frost and back-up players at the jook joint.



Macchio in front of Hoddings Hotel drenched by artificial rain. Below: Cinematographer Bailey.



have had that look from the beginning.”

“I find shooting in black-and-white very satisfying. I would like to do my next project, *Born In The USA*, in black-and-white. It is a very gritty, lower depth story – garage band rock and roll, young people who don’t have too much hope for the future, a tormented family. I think that color, especially for the music stuff, will give it too much excitement.”

A good example of what color can do is the guitar duel in the Devil’s Church near the end of *Crossroads*. Even though nearly everybody was dressed in black, it still has a vibrant quality. Just the fact that it was filmed in color gives that sequence the kind of atmosphere it needed. That same use of color might disturb the atmosphere in Bailey’s next film, by drawing attention away from the problems of the protagonists. “So,” Bailey said, “we’re still talking about it.”

In order to give the people and the interiors that elegiac feeling, Bailey used a lot of soft lighting. “Soft lighting tends to look a little more romantic and more pleasing. It is softer on the eyes and the sensibilities. The one thing I wanted to avoid was a sense of flat lighting. So while I used a lot of soft light, we tried to keep it crosslighted and away from a predominant front key.”

Seneca has a wonderful face and crosslighting and top lighting were especially effective on close-ups of him. Bailey had

worked with Seneca in *Silverado* (he played Danny Glover’s father) and knew what to expect when lighting him. He also did some casting tests early on, not only of Seneca but of Joe Morton (the devil’s assistant) and others. “Partly for definition and partly for style I tried to use a lot of crosslighting and rims,” Bailey summed up.

Two sequences stand out in the film both as strong story points and as strong visual points. The first takes place in the black jook joint. The set was built on stage in Burbank and Bailey remembers the main challenge was its low, hard ceiling and the difficulty he had in lighting the room from end to end. “It was less than seven feet high and we saw the whole length of it sometimes. We took a lot of really cheap spun metal light fixtures. We got different kinds; some were hemispherical, some were tubular and some conical – just as though they had been bought at thrift stores and put up over time. We wired them all – about three or four dozen – and put very high wattage

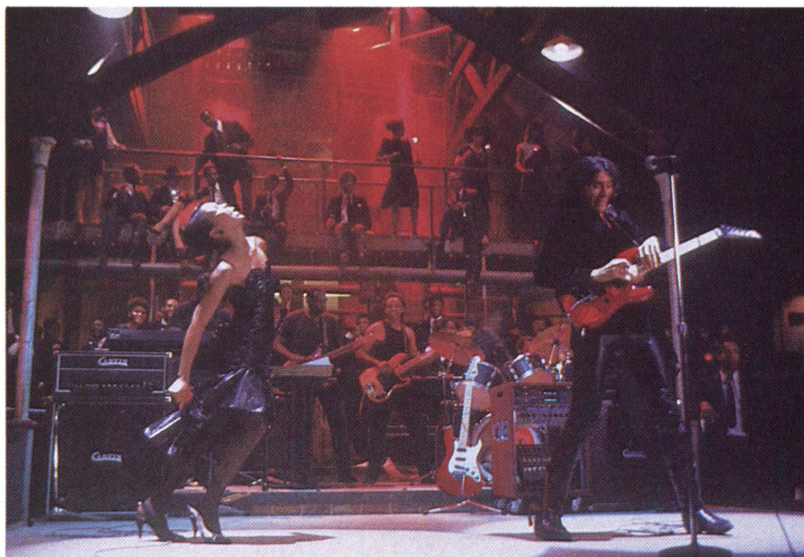
lamps in them. We had a few hanging ones as well.” These lamps had to be responsible for most of the light on the set because there was very little opportunity to hide units on the floor.

“The place was just crammed with dancers and drinkers. It was a wonderful group of black extras that really got into the scene. All the big set pieces, I felt, had a tremendous amount of warmth and energy. It was a very claustrophobic set to work in, but it looked like a real roadhouse,” said Bailey.

“Jack Collis did some very good sets. I usually find that sets that have been aged down and distressed like these were are so artificial. He didn’t just age them down and make them look old, he gave them a kind of patina. The walls had a gloss and a shine to them that looked like it was the result of years and years of having been lived in – of people having walked along and rubbed up against them. The way they were finished – actually stuccoed and painted and finished and rubbed afterwards – gave them a tremendous amount of credibility.”

The other difficult memorable scene was the climactic guitar duel in the Devil’s Church. “There is a tremendous amount of coverage in the sequence,” said Bailey. “And we shot with as many as three cameras. We were on stage for seven days. That amount of coverage wasn’t unusual for Walter. He has worked in the past with a lot of cameras – sometimes five, six, seven for action stuff – and a lot of times he has shot with two and three cameras all the way through a film. I hardly ever do that. For the stampede sequence in *Silverado* we used four or five cameras, but basically I just use one camera. There are a lot of films that I don’t use a second camera at all.

“There are logistical problems using that many cameras in a sequence like that. It was fairly highly choreographed because it wasn’t a straight action sequence. It was a very specific story sequence with certain elements



Scenes from the *Devil’s Church* include Gretchen Palmer and Steve Vai as well as Macchio.



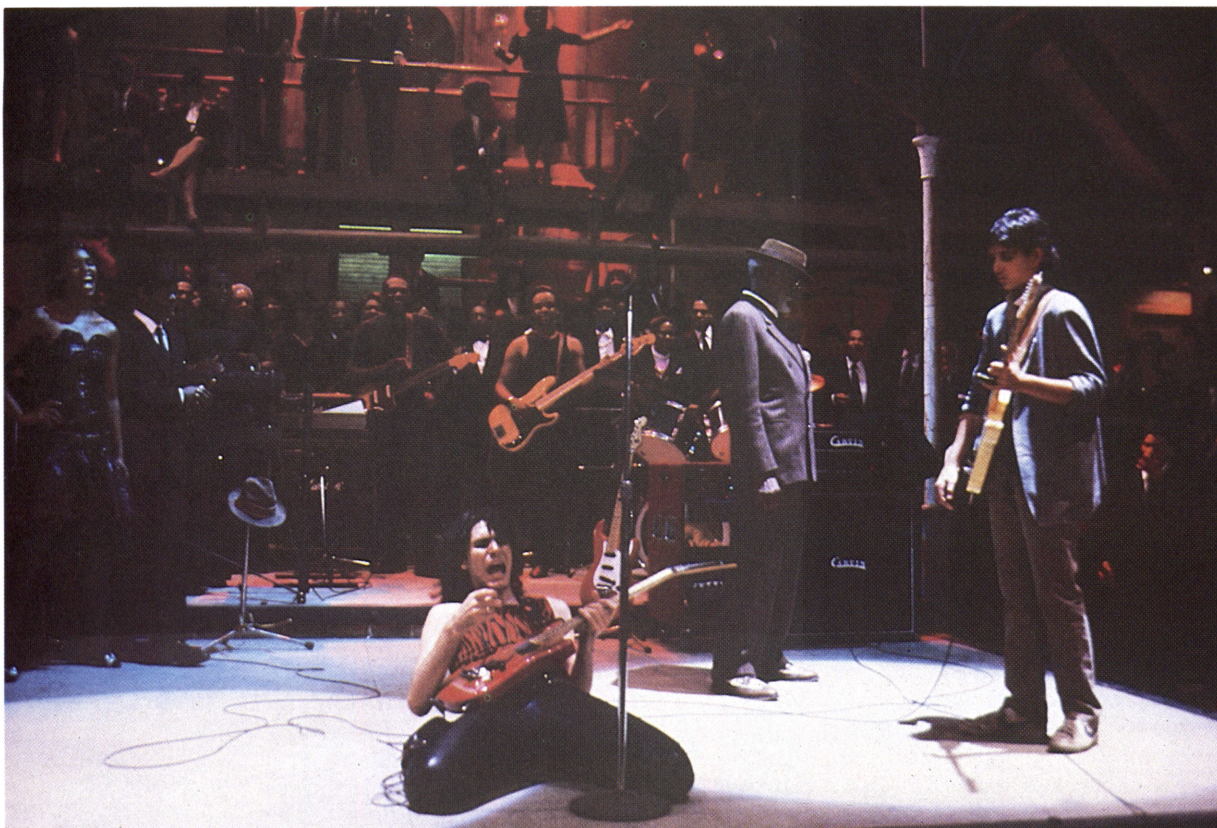
that had to work and we had to repeat it over and over again.

“The set was actually quite large and the platform was in the center so we could work all the way around without having to move anything. It’s actually one of the few times I have had a set that was big enough and high enough that I could put big lights way up high and light the whole thing.

“There was a big fan at the rear of the church and the movement of the fan intrigued me a lot. We had a light below it and outside and backlit the fan and defined it a little bit, then we had a red wash of light to give the set a quasi-Dante’s “Inferno” look to it.

If it wasn’t a metaphoric hell it was at least Purgatory. I thought the magenta contrasted very dramatically with the kind of burned-out blue top light that was focused on the stage where Eugene and Jack Butler were playing. Essentially the colors in that sequence were this washed-out blue, a saturated red, and black.”

There were other visually enchanting moments in the film and several of them involved rain. Rain is not unusual in the Delta, but it never rained the whole time the movie company was there. That meant that all the rain was courtesy of a mechanical effects team. One particular sequence is most convincing. Frances (Jami



Gertz) is a third character who joins Willie and Eugene on their odyssey. She stays with them long enough for Eugene to fall in love with her and for her to discover that she really has no future with the two bluesmen. She packs her bag and leaves Eugene sleeping. She passes Willie in the hall of the run-down hotel and tells him, "There are no goodbyes on the road." She's out the door and headed down the highway in the rain before Eugene misses her.

Cinematically, the trick was to make it look as though it was raining all the way down the road and not just 50 feet in front of the camera. Bailey explains, "We used water trucks to wet down the road as far as we could and then we used rain towers. It is really tough when you are in an open area like that. If you are shooting in an area that has trees or buildings you can actually hide the rain heads and get tremendous depth to them. The hardest thing to do is shoot down an open road. All you can do is put the rain towers out of frame. Of course, you can see down the road forever but you can't bring the towers in very

close once you get a hundred feet or so from the camera. And at that distance they just won't shoot out there and cover the field."

As difficult as it was, it was a scene Bailey especially liked. "I thought it was one of the more poetic shots in the film. She comes out and we see her walk down the road in the rain and there is a car with its lights on coming very slowly – it had a tremendous sense of melancholy."

John Bailey does not consider himself a technical cameraman. He shies away from questions dealing with *how* he shot something but will talk animatedly about *why* he shot it the way he did. For instance, he shot most of *Crossroads* on Eastman's 5247 because he prefers it to 5294 for most situations. Why? "I know that 94 has tremendous latitude and that if you rate it conservatively the blacks hold up very well. But 47 has a transparency, a luminous quality. Whenever I compare it to 94 in tests the results remind of the difference between oil paint and watercolor. In a watercolor the paper always shines through. The paintings are

so transparent and light that they seem to have an inner warmth and glow to them. Heavily applied oil just sits there on top of the canvas. The difference is purely subjective and I don't think I could ever prove it. It's just a feeling that I have."

He has very strong feelings about the tools of his art. "It's a highly technical medium that we work in and I think that all cinematographers are very stimulated by that. The constant evolution of equipment and technique is interesting in and of itself. But for me the big interest in the technical things is that they are liberating. It allows me to concentrate more on what I really want to concentrate on. The more sophisticated the tools become the more reliable they are. That means that it is easier for me to do the work that *has* to be done so that I can free myself to be with the director, to be a support for the actors, to contribute all the things that a cinematographer can." △

Nora Lee writes regularly for *American Cinematographer*. She is a production co-ordinator with special effects expertise.

THE PROFESSIONALS

Donald McAlpine, ASC/ACS is a respected Director of Photography with over 30 film credits including: *BREAKER MORANT*, *TEMPEST*, *MY BRILLIANT CAREER*, *HARRY AND SON* and *MOSCOW ON THE HUDSON*. We asked Mr. McAlpine to talk about his experiences using HMI lights.

"I discovered LTM's HMI lights in the land down under."

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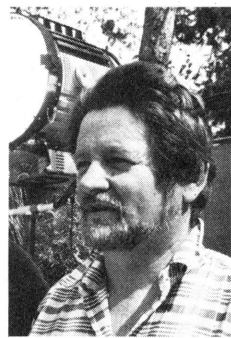


Donald McAlpine (center) with Jamie Anderson (Cameraman) and Norm Glasser (Gaffer) during filming of *DOWN AND OUT IN BEVERLY HILLS*.

"The reliability of HMIs has increased geometrically."

"In the early days, I always ordered 50% more lights than I required to cover breakdowns, but this is no longer necessary. During the shooting of my most recent film, *DOWN AND OUT IN BEVERLY HILLS*, all the HMI lights were from LTM, and there wasn't a single malfunction, that I am aware of."

"That is pretty remarkable!"



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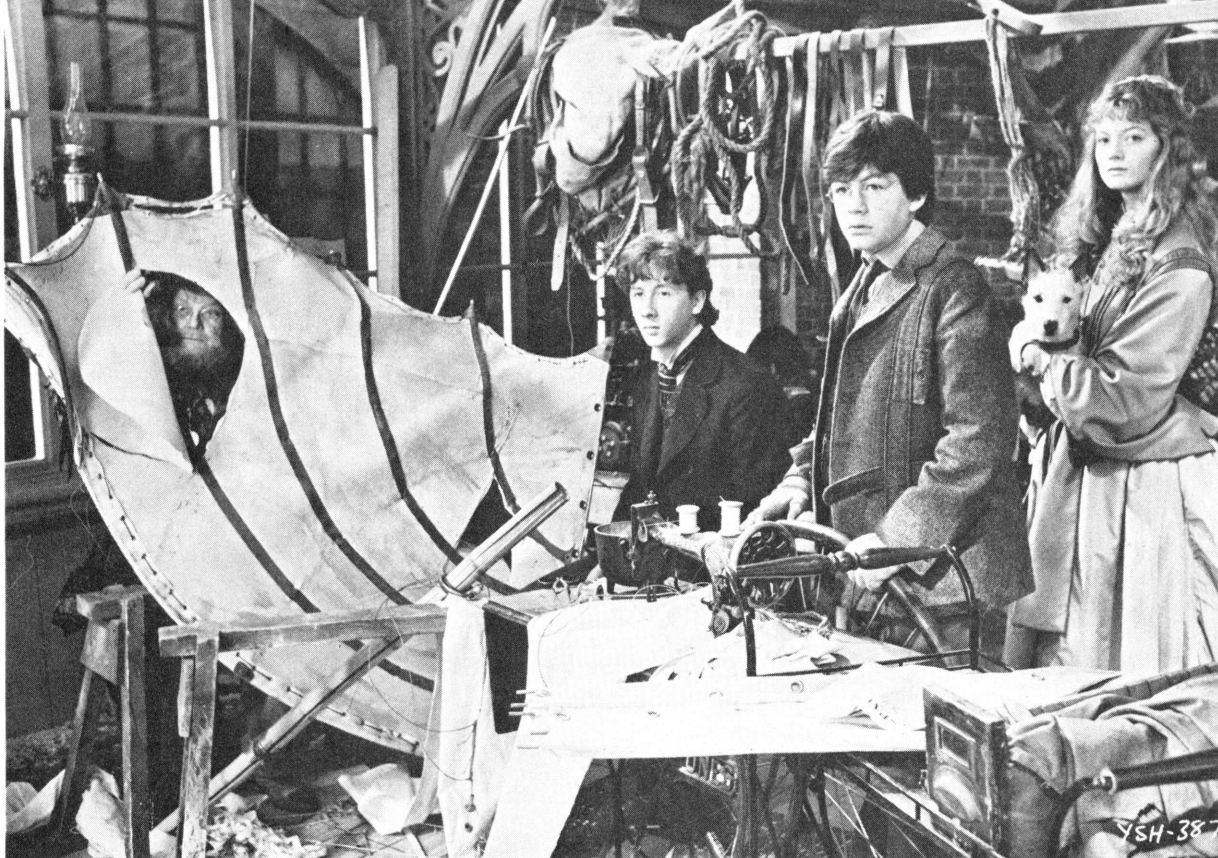


Photo by George Whitear

YOUNG SHERLOCK HOLMES

a 'What If?' Tale

by Paul Mandell

When executive producer Steven Spielberg and screenwriter Chris Columbus decided to put *Young Sherlock Holmes* on the screen, it seemed a safe bet that even amid the baroque settings, some extraordinary visual effects would figure in. *Goonies* or *Indiana Jones* it is not, but echoes of both reverberate as the teenage sleuth and his sidekick, Watson, enter a Temple of Doom and embark on their first adventure. Jarring sequences sprout when Industrial Light & Magic takes over – a harpy goes for the jugular, cream puffs and eclairs become vicious gremlins, a

stained glass apparition attacks a priest. Baker Street was never like this. And with Spielberg at the control board, it's an amazing story, directed by Barry Levinson, of *Diner* fame, and lushly photographed in England by Stephen Goldblatt B.S.C.

The character responsible for this mayhem is a hooded, faceless disciple of an underground cult who, throughout the first part of the film, fires an hallucinogenic drug into the necks of his victims with a blow gun. In the tradition of *The List of Adrian Messenger*, certain individuals are dispatched

Produced by Amblin Entertainment
Directed by Barry Levinson
Director of Photography, Steven Goldblatt, BSC

one by one: unhinged by their violent hallucinations, they quickly do themselves in. Only through sheer will power do our heroes abort their own horrible deaths.

Putting these sequences on film meant using ILM's entire arsenal of techniques – dimensional animation, rod puppets combined with live action via blue screen mattes, articulate rotoscoping, and a new method of compositing computer-generated images onto motion picture film. Though the sequences were kept short, it meant pushing each department beyond the norm. But to



Professor Waxflatter (Nigel Stock) attacked by a flying harpy of bronze. Below: The metal bookend comes to life. Opposite: Waxflatter, peeking through the wing of his wrecked flying machine, is watched by Sherlock Holmes (Nicholas Rowe), John Watson (Alan Cox) and Elizabeth (Sophie Ward).

effects supervisor Dennis Muren, that's standard operating procedure.

"Barry Levinson was concerned that *Young Sherlock* should not be an 'effects picture,'" he points out, "so we trimmed each shot down to prevent them from over-powering the film. There really wasn't any area in which we compromised. Each department had to bring its level of work up. At the beginning of the project, for instance, I told optical supervisor John Ellis that we were going to have a lot of motion blurs, and we weren't going to be cutting the shutter down to get rid of them. It meant pushing the blue screen process to get those blurs to hold up on the printer and creating a lot of precision roto mattes. The approach was to film and light the puppets as though they were real, without any special considerations."

Remarked one technician, "Seeing Dennis point his flashlight at the screen during the dailies and telling John Ellis that he'd like a matte edge a *little softer* on the scene when we roll it the next time was a usual occurrence. But a comment like that might throw a regular Hollywood optical



Photos by Kerry Nordquist

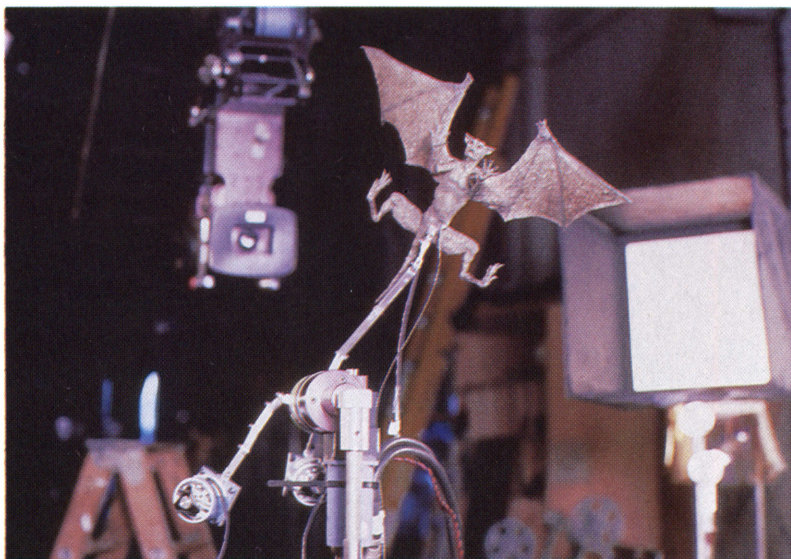
house into convulsions! ILM is used to it, having solved these problems. It makes for all the difference in the world."

Professor Waxflatter is blow-gunned on the way home. As he enters a shop, the hallucination begins. He stares at two bronze bookends in the shop. Suddenly they come to life like bats out of hell and attack him. When he imagines that one of the gargoyle-like creatures is climbing up his chest through his shirt, he repeatedly stabs himself to death.

To produce this sequence, Muren decided to use the go-motion system, a souped-up version of stop-motion animation in which the movements of an articulated puppet are blurred during single-frame exposures for a more natural appearance. The system was first used extensively and successfully on *Dragonslayer* in 1981. Blurred movements are actuated by rods attached to sections of the model's armature. Motors move the rods, a computer governs the specific move-



Dave Sosalla paints the harpies that were used on the set in London. Below: A harpy mounted with go-motion rigging.



ments, and the operation is filmed in front of a blue screen. Eventually the rotoscope department eliminates the rigging and the animation is composited with a background plate – in this case, old Waxflatter gesticulating in horror.

A camera crew was stationed at an aviary, and the resulting bird footage was studied carefully for wing action and blurs, much of which was computer-programmed and duplicated in the puppet's animation. Orig-

nally, four harpies were planned – the same go-motion puppet would be filmed four times and bluescreened in. But to reduce costs and the number of elements involved, a decision was made to use only two.

David Sosalla sculpted the harpy model in ILM's Creature Shop and the hands-on animation was done by Harry Walton. The figure's interior used the dismantled armature of one of the smaller *Dragonslayer* models,

which accommodated motor-actuated rods for blurred wing flaps. The go-motion rig in this instance had to be modified, since it was originally designed for a rather large dragon figure whose movements were slower and more graceful. *Young Sherlock's* harpy had to swoop and flit like a bird, requiring some radical moves.

The system minimizes conventional stop-motion work – a computer program determines the extent of the motorized movements during exposure. For Harry Walton, an experienced dimensional animator (whose custom, rear projection system was recently set up at ILM), the hands-on work consisted of incrementing the head, mouth, and arms. Mike Owens photographed, insuring that the lighting scheme on the harpy matched the background plate. Then it was up to the optical department to matte in the blurred figures.

According to John Ellis, "We modified our blue screen process just to hold the blurs, with a lot of help from Ellen Lichtwardt of the rotoscope department. She got rid of the rods and cables while I maintained the blur sections. If you look at the harpies over a light table, you'd notice that in some frames, the wings are gone completely. They're moving so fast, there is no longer any picture information. We just tried to duplicate what the original bird test looked like.

"Ordinarily to make a holdout matte of the foreground subject, we make a black & white print of the blue record and bi-pack it with the color negative of the blue screen shot. That 'sandwich' is then printed onto a new black & white film, resulting in a matte. In the case of the harpies, I just altered the blue record. That's not advantageous for normal blue screen work, but on blurred objects, it is. It meant changing the exposure of the blue record quite a bit, allowing for some transparency in the matte to maintain blurs. It's an old trick; it's nothing new."

The sequence ends with the creature crawling up and under Waxflatter's clothing. Go-Motion was not needed here – the shot used a cable-operated facsimile of the animation puppet on the actor. The effect is horrifying, in the best sense of the word.

Later in the film, young Watson is blow-gunned as he escapes from the cult ceremony into a graveyard. A portly kid with chronic custard stains on his lapel, he stumbles upon a crypt which he imagines to be a pantry shelf chockful of eclairs and cream puffs. His hallucination mounts and the food springs to life. Flexing their muscular arms, the vicious confections vault off their platforms and surround Watson in an endless minute of high anxiety.

"The food sequence certainly could have been done in stop-motion," Dennis Muren admits. "The harpy could have been a stop-motion figure in front of a process screen, and the food could have been dimensionally animated on a big set with people blue-screened in. I mentioned this to Steven Spielberg when the food sequence was being discussed. I asked if he wanted it to *look* like stop-motion, or go-motion to make it look more real. Naturally he said 'More real.'

"It just seemed like we should try something different. Not to put stop-motion down, because I love it. But you could sort of figure out how the food sequence would have looked in stop-motion. So we went for a system of rod puppets shot against a blue screen and combined with the live actor. A year ago, I don't think I would've had the courage to try a thing like that. But it started on *Dragonslayer*, and the Rancor in *Return of the Jedi* worked out."

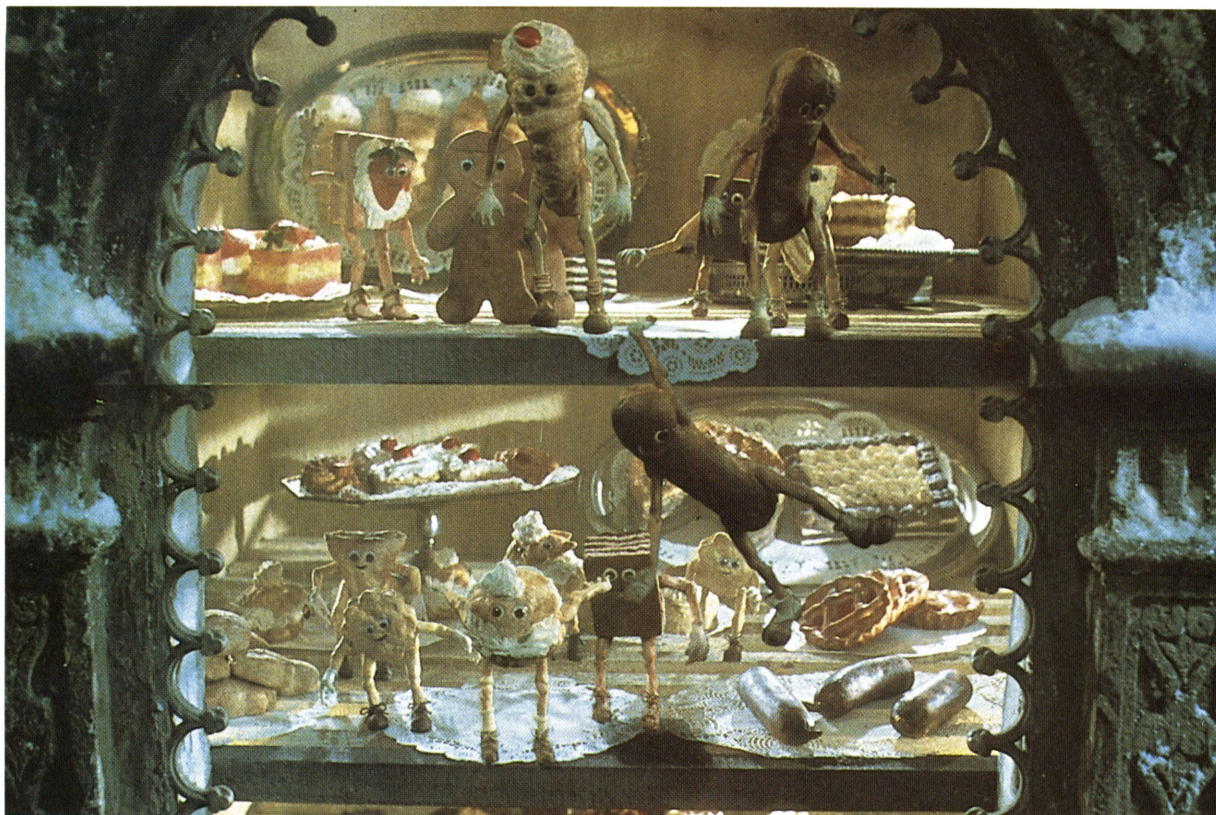
The food sequence is disarming. Never before had tiny rod puppets been integrated so realistically with a live actor. The blue screen work is invisible; audiences experience a total suspension of disbelief as the pastry demons swarm around Watson and torment him, almost to the point of no return.



Watson, helpless on the ground, is attacked by pastry-people. Center: Pastry sequence motion supervisor Dave Allen and puppeteer Jay Davis attach food puppets to Watson. Below: Jay Davis manipulates puppets that will shove food into Watson's mouth.



The pastries swarm from the "pantry." Below: Jay Davis and Bob Cooper operate a rod puppet to be composited into the food hallucination sequence.



Creative differences between Steven Spielberg and Barry Levinson almost resulted in the sequence being scrapped. Spielberg wanted it to be humorous; Levinson saw the critters as totally evil. Fortunately a happy medium was reached. Technically, though, it was an episode created by John P. Fulton, ASC, in the 1935 *Bride of Frankenstein* that inspired Dennis

Muren's thinking – that of Dr. Pretorius' miniature people, with the King escaping from his bottle and sweeping across the frame on a pair of giant tweezers. The James Whale vignette was sheer throw-away, but something on that order seemed appropriate for Watson's hallucination.

"I was trying to make the food sequence as bold as that," says Muren, "so you're looking at this stuff and you're saying 'This is really going on!' The shots ended up getting cut shorter than how I wanted them to be, and a few ideas weren't filmed. We were going to have one of the pastries walk in long shot, jump down on the actor's chest, and walk forward. In the down shot, he'd be struggling and the bluescreened puppet would be thrashing around with him. I just wanted it to be as bold and jarring as that sequence in *The Bride*."

Head puppeteers Jay Davis and Bob Cooper, both alumni of *Gremlins*, designed the characters from art director Dave Carson's sketches. They also sculpted most of the arms and

feet, complete with little Victorian shoes.

At first, there were food fights. *Real* food fights. To sell the idea to Spielberg, tests were filmed of the rod puppets punching each other out against black velvet, "Three Stooges" style. As Jay Davis recalls, "We had a cream puff and a hot dog walk in on a cross-track. One puppet would walk towards the center and converge with another. The cream puff pushed the hot dog, and the hot dog poked the cream puff in the eye. Then another dog jumped on his back and they were fighting all over the place! It was pretty hilarious."

With the technique approved, rehearsals began on a blue screen stage. It took three people to operate one puppet. "finding the person with the right touch was difficult," noted Bob Cooper. "Blair Clark, who also worked with us on *Gremlins*, was fortunately available. Stop-motion animator Tony Laudati also puppeteered.

"Sean Casey was our mold maker, a major task. We

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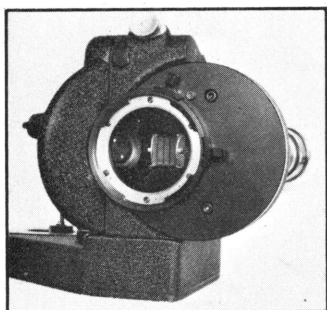
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took molds of real food with whipped cream. We had to freeze the food and make alginate molds from that. Then we put wax in the alginate and got wax positives out of the molds. Finally, we made a plaster mold from that and injected foam rubber into it, and we had our characters. Marghe McMahon painted most of the food and occasionally puppeteered."

Large sections of the mausoleum used for the establishing shots done at Elstree Studios were shipped to Marin County, and ILM had to recreate the entire set on their own stages to do the trick work. Actor Allen Cox (Watson), whose scenes served as background plates into which the puppets would be optically inserted, was flown in. Prior to each take, a Curtis fog machine was used to replicate the graveyard atmosphere filmed in England.

Though the sequence whizzes by in less than a minute, it took over four months to complete, with two months of blue screen photography by cameraman Scott Farrar.

Working closely with Farrar was stop-motion animator David Allen, who came to ILM from Los Angeles and directed the sequence from a technical point of view. "Production was running behind," says Allen, "so I was called in rather late. I did get involved with the look of a few creatures. Originally I was supposed to animate the harpy, but it was decided that I would be more effective on the food sequence." Although Allen had not worked with rod puppets before, his expertise in staging figurines was a great asset. He choreographed the action and designed the way in which the operators could place their characters in various perspectives. Inserting clips of the background plate in the finder of the EmpireFlex VistaVision camera enabled Allen and Farrar to determine how the action would marry up.

Not all of the food creatures were rod puppets put in optically. Four or five marionettes

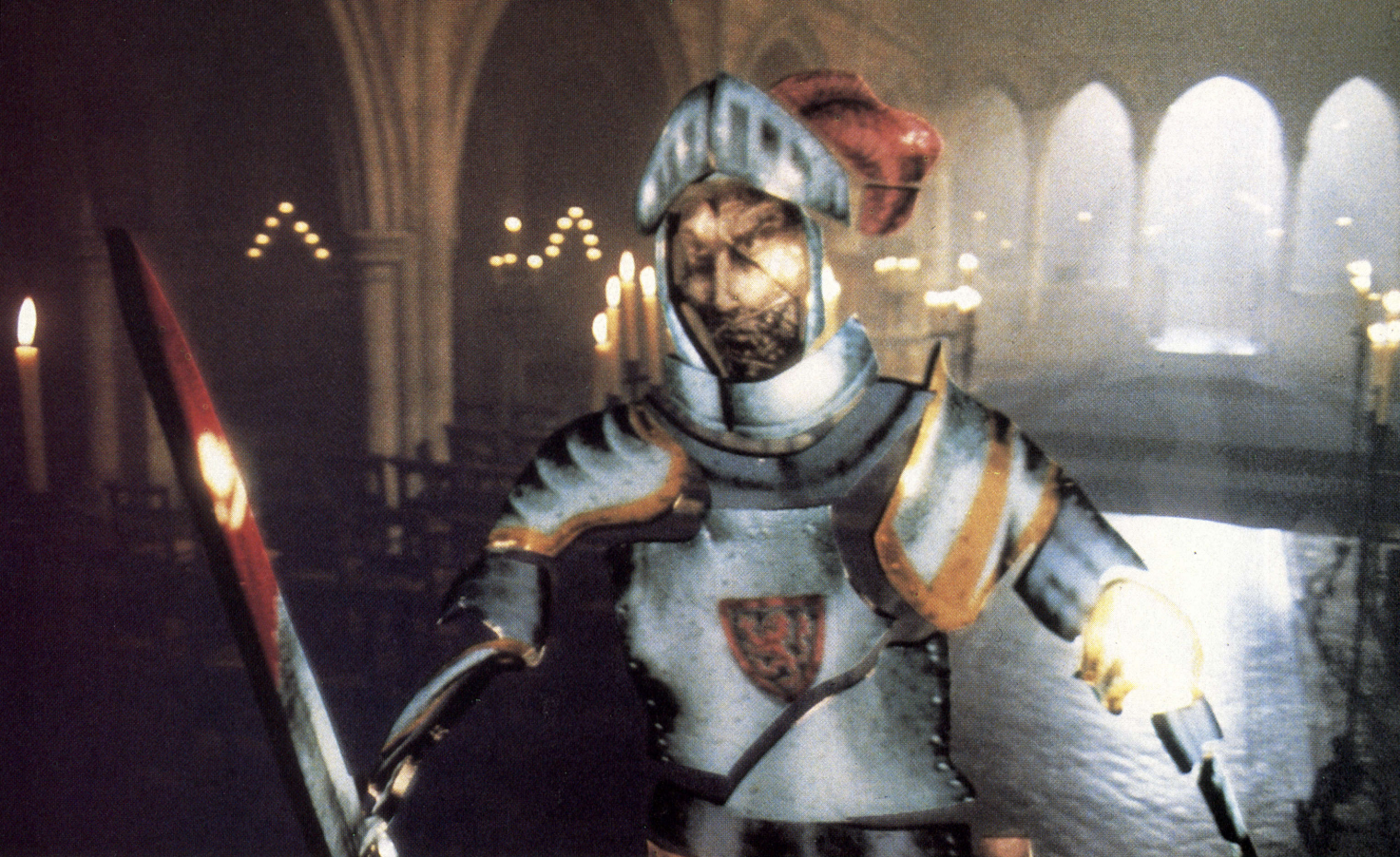
were planted in the background to reduce the amount of bluescreen work and help establish lighting for the rod puppets. "At one point we had over 20 strings working," Jay Davis explains. "Many of them were coming right from the camera position, going in at weird angles. Usually in marionetting, you try to keep all your strings going in at the same direction so you lose the glint. These were going all over the place.

"The marionettes were pretty stiff. We had something like 100 nylon lines in a sealed room with no ventilation in the middle of a heat wave. On top of that, we had to fog the set completely and wait for it to settle. We could only shoot for a minute or so. As soon as it would thin out, we'd have to fog it up again. Everyone wore vapor masks to prevent eyeburn."

Rod puppet mechanisms were kept simple due to the crunch in scheduling, but nothing high-tech was required, anyway. The 8 to 10-inch figures used simple plastic joints and hinges.

While over a dozen food food demons appeared to be jumping around in unison, each figure was generally photographed as a single bluescreen element. Earlier, 2 or 3 figures were puppeteered simultaneously as one element to save time. Once the operation was under control, each was dealt with separately. Since it was imperative that the operators not interfere with the lighting on the puppets, they were forced to huddle in odd configurations. With five contorted people in face masks pulling rods and piano wire, the dailies resembled some weird M.A.S.H. unit performing meatball surgery.

The sequence was largely staged for the camera to be looking up at the puppets, so an articulate hand-drawn matte could obliterate the support area. In those shots, the figures were "walked" on slotted aluminum tracks, which were lined up in the eyepiece, parallel with the edges of the crypt. For the "down" shots, the characters moved about on slotted plexiglass sheets.



The menacing knight of stained glass.

Mirrored mylar covered the plexiglass in certain shots so that the blue screen would reflect upward, enveloping the scene in as much blue as possible. Lighting here was crucial – any blue spill on the puppets would be disastrous. According to Jay Davis, “We put little brass tubes under the feet, so the puppets were raised about a half-inch off the mylar surface. That wasn’t too difficult. But the whole sequence took a long time to shoot. On a good day, we shot 3 blue screen elements. Altogether, we had 72 elements to add. And it was all done without using a monitor.

“We were constantly changing film speeds to create the proper impact. It was all guesswork. That was hard, trying to guess how something would act at a particular speed. You might shoot one puppet at 8 fps and another at 18 fps. So we staggered the speeds. It was constantly changing.

“One of the most difficult shots was the second one we did. The puppet had to stand, swing its arms, jump six inches down, land,

recover, walk across the set, and climb up the back of a statue. That took us 34 takes. I think we used Take Number 33!”

Each character was given a specific personality. “That was the *hardest* thing,” Davis adds, “constantly coming up with different movements for each little guy. The strawberry was kept feminine, the eclair acrobatic. We did one take that Dave Allen loved which we called ‘The Mummy’, where one of the characters walks toward the camera with an arm dangling and one leg scooting along. That was done as a spoof, but Dave was responsible for most of those nuances.”

Once the roto and optical teams took over, the magic was complete. The scenes were projected on animation stands. Garbage mattes resembling odd-shaped windows were opaqued, eliminating the puppeteers, rods, and lights (the “garbage”). Only small areas of blue screen around the puppets were preserved. (In the optical printer, the blue areas go black and merge with the garbage matte film strip, forming a

solid black field around the puppets.) Precision roto mattes were traced by Ellen Lichtwardt and company around the image of the actor, allowing the puppets to appear “behind” him when necessary. Shadows were drawn and filmed as separate elements.

Finally, after numerous passes on the printer, background and foreground elements were married on a new negative. Result? A first-generation look with no matte lines.

“The blue screen work in *Young Sherlock* is some of the best we’ve ever done,” says John Ellis. “On most shows, you end up with bad elements and we’d have to remake them. That didn’t happen here. Scott Farrar’s stuff was right on the money. I didn’t have to alter a lot of the material because the lighting was very good to begin with. Ellen’s articulate mattes held the characters without losing the edges. And Jack Mongovan’s shadows were incredible. That really tied them into the scene, especially when they were jumping off the ledges.”



Bill Reeves and John Lasseter digitize shapes from a three dimensional model of the stained glass knight. Below: Matte artist Chris Evans refines the digitized version of his stained glass painting on the Pixar paint system.



With that trick done, the third hallucination was the toughest rabbit to pull out of ILM's hat: How do you show a man made of stained glass emerge from a church window and terrorize a priest? It was a conceptual enigma, coming up with an image that was as unfamiliar-looking as it was menacing.

Dennis Muren decided to go with a computer-generated image and have it optically combined with the background plate shot in England. As the sequence's cre-

ative director, he spent six months developing this image with the Pixar Computer Group, a separate division of Lucasfilm Ltd. The result was something new and daring.

"At first, no one was sure if this method would work," Muren recalls candidly. "I had all sorts of alternate plans if we had decided to back out of it. We had designs for a stop-motion figure. Another possibility was a rod puppet. Another was to do something in the animation department, or

just go with a computer-generated outline. There were many bail-out points.

"So there we were, with a real conceptual problem. How can an old man be afraid of glass? How can we make this thing look threatening and powerful? I remembered an old stop-motion commercial I did for Bold detergent where we animated a flat paper doll-like figure. But I had to reject that idea for the Glass Man. I don't know how we would have gotten all the pieces to stick together and twist. And anything resembling plastic would start to look very unthreatening. We certainly didn't want it to look like Gumby walking along. Nor did we want something like a light show.

"It just seemed like the right time to showcase our computer technology. George Lucas was spending a lot of money developing this equipment, so we agreed to put it to use on *Young Sherlock*. It had been used to generate a sequence for *Star Trek II* under the supervision of Jim Veillieux, but no specific effect had quite been done with it. As it turned out, the computer guys went way beyond what they had intended to do.

"There were other decisions. When the character jumps from the window, we were wondering if he should have veins of lead binding him. My wife came up with the idea of not having any lead, so when he landed, he'd be more like a mobile. Which is perfect for computers, but *horrible* for stop-motion. The computer gave us the plausibility for our Stained Glass Man."

Scenes of the priest hallucinating in the church were shot in England. The atmosphere was hazy and diffused; making a special image look like part of the environment was problematic. Dennis Muren came to England with Dave Carson and computer animator John Lasseter to analyze the situation.

"At that time, says Muren, "we still weren't sure if a computer image would work out.

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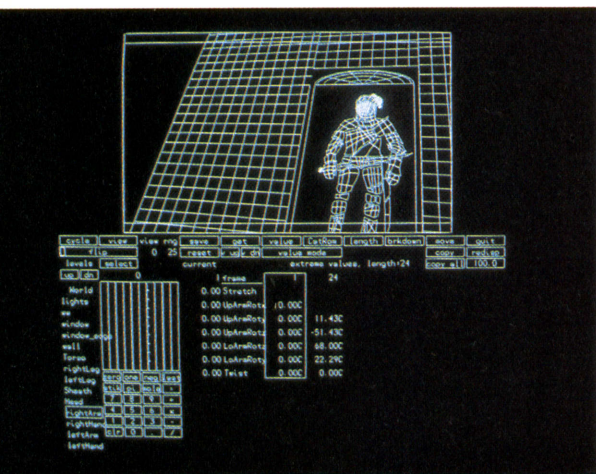
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Vector graphic models of the stained glass knight were used to choreograph body movement, size and position in frame.

There was a lot of smoke in that church, but I let cameraman Stephen Goldblatt light it his way. I didn't want to hamper those guys and risk making the church shots look inconsistent with the rest of the film."

The problem, it seemed, was not only one of design, but also of the character's texture and ambience. The goal was to stray from the airbrushed look of computer images so popular in commercials and music videos, and create a humanoid form that would react to light in an array of glints, glares, and reflections.

To better assess what goes on with computer images, Muren studied *The Last Starfighter*. "I showed it to the computer people so we could determine what looked real to us and what didn't. We discovered that only four or five shots in the film, of a singular spaceship flying toward the camera, did not resemble airbrushed chrome. It was closer to a white – it had real shadows and highlights on it, and a lot more surface detail. 'Texture mattes' were generated. That all took computer time. So we determined what qualities would work for us, and applied them to this project."

"Building a solid prototype of the image isn't necessary for computer artists. But in the case of the Glass Man, we decided to build a 30-inch model to scrutinize our initial design. It was made of dozens of flat pieces; each piece represented a certain plane, like the facets of a chiseled sculp-

ture. But it looked too symmetrical, almost like a robot of the '80s. It didn't look *old*. We generated just the face on the computer and realized that if this thing walked around a room, it would not evoke the menace of stained glass come to life. That's when we had to start rethinking it."

Research in stained glass revealed some surprises. Not only was it colored by mixing pigments inherently in the glass and by fusing colored metal oxides into it, but also by painting and baking features into its surface. "It was important that we give the character some expression, to make it look stoic and frightening. That dispensed with the 'dead robot' look. So we simplified a number of facial pieces and painted in this expression by running two cracks along the face, just one of the many characteristics translated into our computer program."

One early idea was to have the Glass Man pop off the window, hit the floor in many pieces, and assemble itself, sword in hand. The idea was nixed in favor of having the character appear solid throughout and strategically turn to reveal its shockingly planar dimensions. To guide animator John Lasseter, Jeff Mann of ILM's model shop "played" the Glass Man in a crude costume of white cardboard. Footage of this was shot in front of a grid, much like an Eadweard Muybridge sequence. Without directly rotoscoping it, Lasseter was able to gauge how the character would jump in and start his walk.

Then began the computer image operation. According to Pixar's technical director Bill Reeves, there are five steps. *Design* consists of preliminary artwork. *Modeling* consists of keyboarding an outline on the computer and defining the parameters of the image. *Animation* is the process of moving the artwork around on a cathode ray tube using the computer's "paint box" feature. *Rendering* is applying a surface to the image, giving it solidity and essential characteristics – in this case, that of stained glass. *Output* is the final image that appears on film.

To Muren, an experienced effects cameraman, much of this was new. "From a cinematographer's point of view, so much of what we do is look and react to light. But in this situation, you have nothing to look at for lighting purposes. All you're looking at are two cathode ray tubes, one showing the figure's outline, the other interpreting it dimensionally. It's jarring at first – you can't light it with real light. You can't turn your head and look at the figure from the side, because it's on a monitor. I felt the system had to bend to accommodate me, rather than the other way around."

"One of the things I came up with was to create the lighting effect with *glints*. If his sword is glinting, your eye is going right to it. That really helps set up the menace. At first, what we managed to come up with were three outline forms – an outline of the man, an outline of the light patches, and one of the glints. We also generated a *separate* glint program which was double-exposed over the scene to help break up the edges. Bear in mind that this image was being matted over a smoky environment, and it couldn't look that way."

"We devised a lighting program that would correspond to actual stage lighting. Most computer graphics have 3 light sources – a front key light, a fill side light, and maybe a back rim light. Those sources could be moved around. Being a cameraman, I knew we'd need a lot more than that. Additional lighting allows you to finesse the look of an object – in this case, a computer image. And we were intercutting this with actual motion picture lighting."

"First, we determined what lights were needed on the Glass Man. The computer guys then devised programs to simulate the way the light was going to hit the figure. It could *change* during the scene; it could glint. We could simulate key lights, barndoored lights, spotlights, and we could *focus* them on the computer. There might be puddles of light,

just like a real situation. We were gambling that we could do this.

"I tried the system out for 4 or 5 days. If I decided to raise a light source, one of the computer men would say, 'Ok, we can do that.' In 45 minutes, he'd recompute the frame. I knew at that point that we could pull the sequence off that way.

"We ended up with a system that enabled us to light and relight the Glass Man from the cameraman's point of view, similar to the system on *Tron*. But instead of generating airbrushed chrome, we were generating the characteristics of glass.

"We also came up with a lot of shortcuts by generating low-resolution images for quick feedback. For the lighting, we were doing just 50 scan lines. It was a lot faster than generating something with 600 or 1000 lines. We did this off our *modeled* (outline) figure, not off our *rendered* figure, because it would take too long to compute. On just the outline of the Glass Man, we could find out in 30 seconds if we had a glint in the right place or not."

During the rendering stage, computer artist John Lasseter created a number of "texture mattes" that gave the figure its antique glass surface. Again, this was easier said than done. "We were looking at actual glass all the time," Muren explains. "Bill Reeves and Dave Salesin were constantly keyboarding in interpretations of what that looked like. How light plays off an object in terms of glints and reflections is all geometric and mathematical. That's relatively simple compared to determining how big the *glare* is, and the *quality* of the glare. Does it radiate from a soft edge, hard edge, or ripple? Is there a different *shape* of glare off the front and back side?

"In the beginning, we studied a cheap sort of glass generally used for shower doors. It looked awful. Terrible. But we had to come up with glass that looked as though it were made a long time ago, with a lot of bumps and ripples.

"Texture mattes were introduced during the rendering as was never done before. It consisted of artwork, entirely different from glints. John Lasseter did artwork on a lot of bubbles and dirt, and painted it on a computer paint program. That was fit to match *each piece* and moved along as the figure 'walked' on the monitor. There were five or six texture mattes going with each piece.

"We also made the glass image appear about an inch thick instead of a quarter-inch. That gave it weight. The glass edges were fractured to pick up the light. Dave Salesin added that feature at the very end, which helped. We also curved all the glass in the image, making it look bowed and convex when viewed from the front. That really gave it solidity.

"It was incredibly complicated," Muren admits, "but we've got it, and we can do it again. It took a lot of time. We needed to make 30 or 40 decisions a day. But it also takes a lot of time to create and build stop-motion puppets. Both techniques have very different looks. It's just a matter of deciding what's right for a particular image."

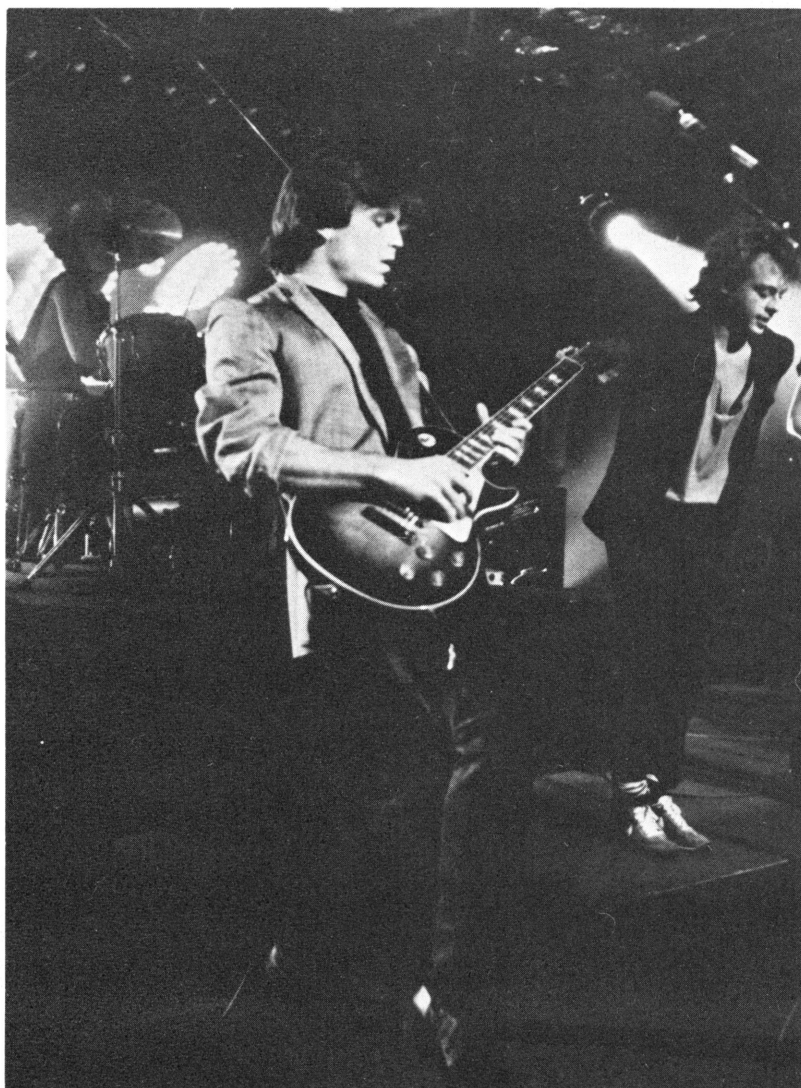
Scenes of the Glass Man were transferred to motion picture film in the form of production passes (the primary image, the highlights, the glints) and mattes (silhouettes of the same) so the optical team could combine them with the church background. Only one shot had background and foreground combined *digitally*, as it involved a very tricky focus change. Dennis Muren describes it as "a tilt-up panning shot. In closeup, you see his hands come together, a tilt to the sword, and a focus pull to his face. I didn't want to do any matte work with that focus change. When you do that, the matte edge on the sword suddenly becomes soft, and too dangerous to handle optically. By having the computer people combine the entire shot digitally, we had no matte problems. That's one of the best examples I know of, of a digital composite. We plan to do more of it."

To transfer the Glass Man onto movie film, the Pixar group used a high-resolution three-color laser scanner. Development of the device started in November 1979 and was completed in March 1985 by computer R&D director David DeFrancesco and eight engineers. Instead of photographing the images directly off a cathode ray tube, a laser beam scans the electronic image onto VistaVision film with a resolving power of up to 10,000 scan lines. The result is the quality, resolution and dynamic range associated with traditional motion picture photography. While laser-scanning a photographic image has been around for almost a decade (magazines employ the process for picture reproduction) cost factors and lack of intensive R&D programs at conventional optical houses made such a development impractical for widespread industrial use. Lucasfilms' scanner has changed that situation, and its application to traveling matte work represents one of the latest boons in the art of special effects.

"Putting the Glass Man together was a real challenge," says John Ellis. "We had to put the environment around the character, which required a lot of flashing and highlights added in animation. *Tron* had a lot of glows. We tried to avoid that look, and relied more on highlights spilling off as candlelight flickers. It was great—the computer guys provided all of the elements, and we'd composite them like front light/back light traveling matte shots. Then we'd add diffusion and anything necessary to integrate it into that hazy environment."

"The computer is a tremendous tool," Ellis concludes. "It's no threat to anyone here at ILM. We did some ground-breaking work with it in *Young Sherlock*. We're looking forward to using it again." △

Paul Mandell is a New York-based writer and motion picture technician.



Photos by Richard Foreman

Success is the Theme of *Thunder Alley*

by Pamela Rosenberg

*Produced by Golan-Globus
Directed by J.S. Cardone
Karen Grossman, director of photography*

Thunder Alley, a Cannon release, follows the relationship of two close friends in a rock n' roll band. For the second time, director of photography Karen Grossman teamed up with director/script-writer Joe Cardone. Together they decided to create a look that graphically depicts the disintegration of the ideals and friendship between actors Roger Wilson and Scott McGinnis as their band becomes a hit. Cardone also wanted to maintain the realism of his semi-autobiographical script, allowing the audience to feel and to become for 90 minutes a part of *Thunder Alley*.

Cardone and Grossman worked closely with production designer Joe Garrity and gaffer Greg Gardner while prepping for the film. Location scouting began. Cardone immediately took Grossman to *Thunder Alley*, a street which still exists in his hometown of Tucson. At one time, *Thunder Alley* housed night clubs boasting the best rock n' roll music in the state. The road to success was precisely mapped out. A band would begin at the bottom of the street and then work its way to the hottest night spot located literally at the top of the street.

Since a major portion of the film took place at night, most of the location scouting was done at night. Grossman noted how the city hopped and jived at night and how many bands still came in search of success and fortune.

Cardone sought to maintain the realism of *Thunder Alley*'s unique atmosphere and location. However, after securing all the necessary filming permits for that area and one week already into pre-production, Cardone admitted he had to look for a new locale. *Thunder Alley* was authentic, but was no longer cinematic. Recognizing the problem, scouting began again. Fortunately, they were able to find new locations just two blocks from *Thunder Alley*. "We got the locations we wanted," Grossman says, "allowing for the photogenic and appropriate lighting situations."

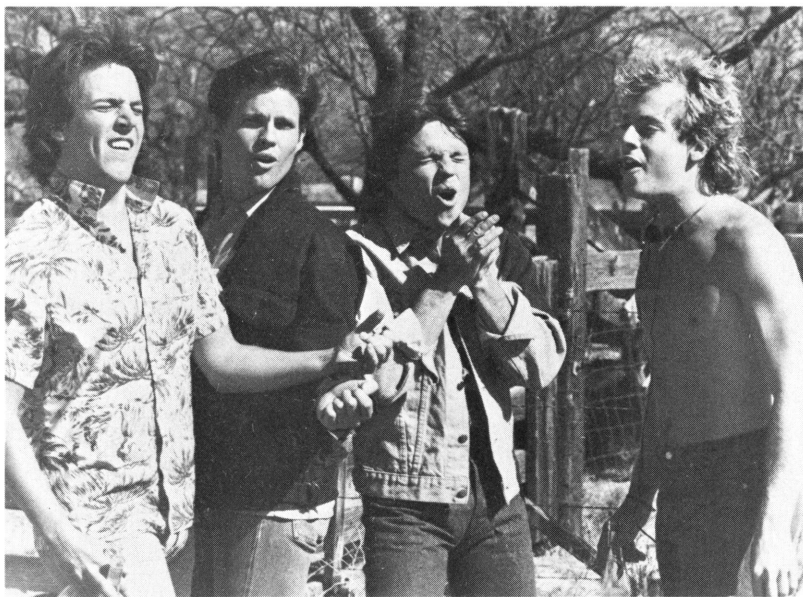
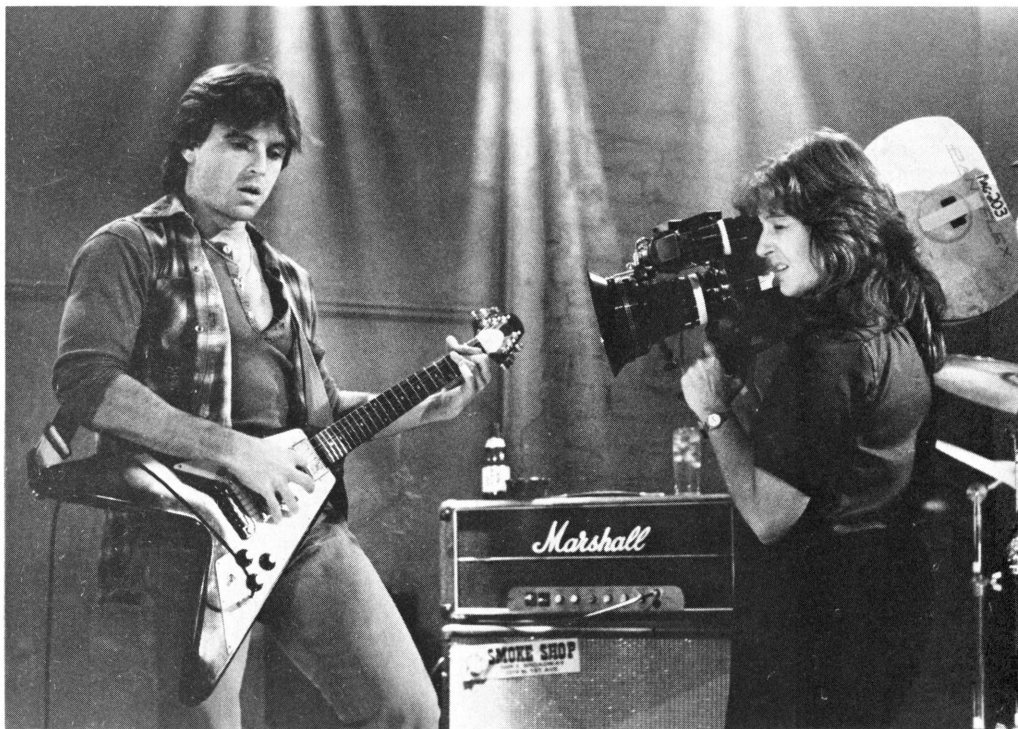
As Cardone and Grossman storyboarded each scene of *Thunder Alley*, a color scheme developed to visually enhance the plot progression of the script and to drive home the story's themes. An initial color differentiation was established between the hero's home environment, the Arizona desert, and the big city of Tucson. To warm up the desert, Grossman used a set of coral filters. The warm, pink-rose colors of the desert differed greatly from the blue, cool scenes emphasizing the angst and grittiness of the city.

Both the script and shooting style further distinguished the city from the desert. Footage shot at Richie's farm were day scenes, made with wide lenses and easy camera movements suggesting the warm, straightforward environs and population. Contrasted with those scenes were the night segments covered by many camera movements and angles, portraying the frenetic city life.

As their rock n' roll band 'Magic' moves from club to club, they acquire both a following and success. The set design and lighting reflects the various emotional stages of the principal actors, Wilson, McGinnis and Lief Garrett, in the story. Also, since the chosen locations look similar, the color scheme combined with the decor and lighting gives each club singularity of character.

The first time out on the road, the band sets up equipment with great apprehension and uncertainty as to how they will be received by the rowdy clientele. Production designer Garrity masked the club in a cold, corrugated steel. Then Grossman bathed the set in blue, cool light to visually emphasize the band's fears of an inhospitable reception.

At the next gig's location, Grossman chose to remain with the traditional red and gold colors of a country western club. Her decision to use those colors and complimentary lighting also provided the appropriate backdrop for the hostile confrontation be-



Grossman photographs Wilson. Below: Members of the band, Phil Brock, Scott McGinnis, Wilson and Lief Garrett. Opposite Page: Wilson makes electrifying debut with the band at The Palace.

tween actors Wilson and McGinnis, a pivotal point in the film.

Finally booked at The Palace, the hottest night spot in town, the band eagerly sets up in the club. The massive space was completely lit and dressed in white. White was chosen, since Grossman wanted this 'ideal' club to be devoid of any color. She hoped to achieve "another dimen-

sion" illustrating the lack of humanity paralleling the story line. The action plays in the dressing room of The Palace. There, friendship and communication break down entirely. Against the stark white dressing room, subtly highlighted in blacks and greys, the actors' flesh tones ironically become the sole colors in this colorless setting.

McGinnis pleads with Wilson to join up with the band.



In response to the unique working situation, after some discussion Cardone and Grossman decided on a 'moving master' as the standard, master-type shot of the film. The talent was quite new to film so generally, the first takes were always very exciting. However, with time and a few more takes, the actors had less energy. A moving master took advantage of how much could be physically shot in one take. Grossman described how first Cardone and the actors would work out their blocking and then the camera crew would come in. "I would have a very detailed camera rehearsal with lens and lighting. One shot may have consisted of seven dollies, 15 focus pulls, besides the actors moving themselves. And then, only if needed, would coverage be shot." Grossman's shooting ratio was about ten to one. "Despite the number of takes, generally the first and second takes were the best. After that, performances usually began to change. It might take a whole day to shoot one

shot with a couple of intercuts, but then a three or four page scene would have been completed."

There were nine big rock n' roll numbers with the five man band. Budget constraints did not allow for a pre-lighting crew to rig the next set. It was decided that Grossman would be left with the best boy during shooting, while gaffer Greg Gardner went to pre-light the next rock n' roll numbers.

The size of the sets and schedule limitations demanded a larger crew than what was available in order to get the work done. Undaunted by the challenge, Gardner phoned some local schools to recruit bodies. The new crew members were in for a surprise and so was Grossman. "He ran a lighting school. I would be on the set and I would hear him off to the side ask one of the kids, 'Now tell me, what's wrong with that light?' I think those kids even got credit," Grossman added, remembering Gardner's innovative approach to low budget filmmaking.

The rock n' roll music wove in and out of the storyline. To achieve that integration of music and story, Grossman and Cardone opted for camera angles revealing interaction between members of the band. Those angles included the club audience's POV of the band; the band's POV of the audience and the band member's POV of one another. Using these kinds of shots, Cardone believed that the musical numbers would not bring the film's story progression to a crashing stop.

Unlike the usual fare for splashy, slick musical numbers, the lighting corresponded to the reality of those Thunder Alley clubs that earlier, Grossman and Cardone had so diligently scouted. "We enhanced the light a bit more, in order to have something to work with," Grossman explained. "We were going for a look that was not only exciting but real looking."

Somewhat unusual from most filmed rock n' roll numbers,

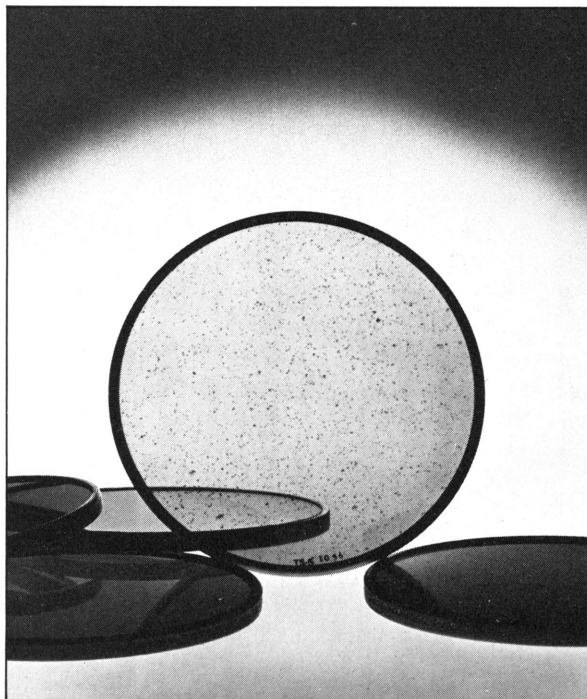
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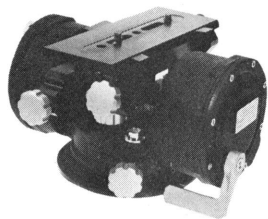
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only the music was pre-recorded for the playback. All the vocals were taped live on the set during the filming. Although this allowed for more provocative performances by the actors, it presented some equally provocative issues for the camera.

After meticulous prepping, three cameras were set up. Grossman placed two cameras at either side of the band to capture the story points and interaction between the musicians during the song. The remaining camera shot the lead singer. Three to four takes were shot of each song. After each take, Grossman changed the camera position which gave the editor alternative matching shots. This again presented each song not merely as a performance, but also as an integral part of the whole story.

The realism of *Thunder Alley* matches Karen Grossman's personal camera style. "I also try to make a film as real as possible. I want to bring the audience into the story and let them get involved. Make it real. I like to walk into a room or on a set and turn on all the lights to get the real feeling. Then work begins as I try to reproduce that reality."

Thunder Alley was not an easy picture to make. However, Grossman was pleased to discover that the crew was genuinely interested in doing the best work possible. She remembers seeing "about 70 people show up for the dailies. The dailies were specifically scheduled to accommodate the crew. I think it was good for morale. It was hard work, a lot of physical locations, weeks of night shooting, with long hours of prep after the day's wrap." And despite that, Grossman quietly added, "I believe we were all successful in what we tried." The camera truly became the eye of the storyteller in the film *Thunder Alley*. △

Pamela Rosenberg, who has worked in films and television in several countries, is currently a scenarist, assistant director and dialogue coach on the West Coast.

Alonzo and Crew on *Nothing in Common*

by Karen Erbach

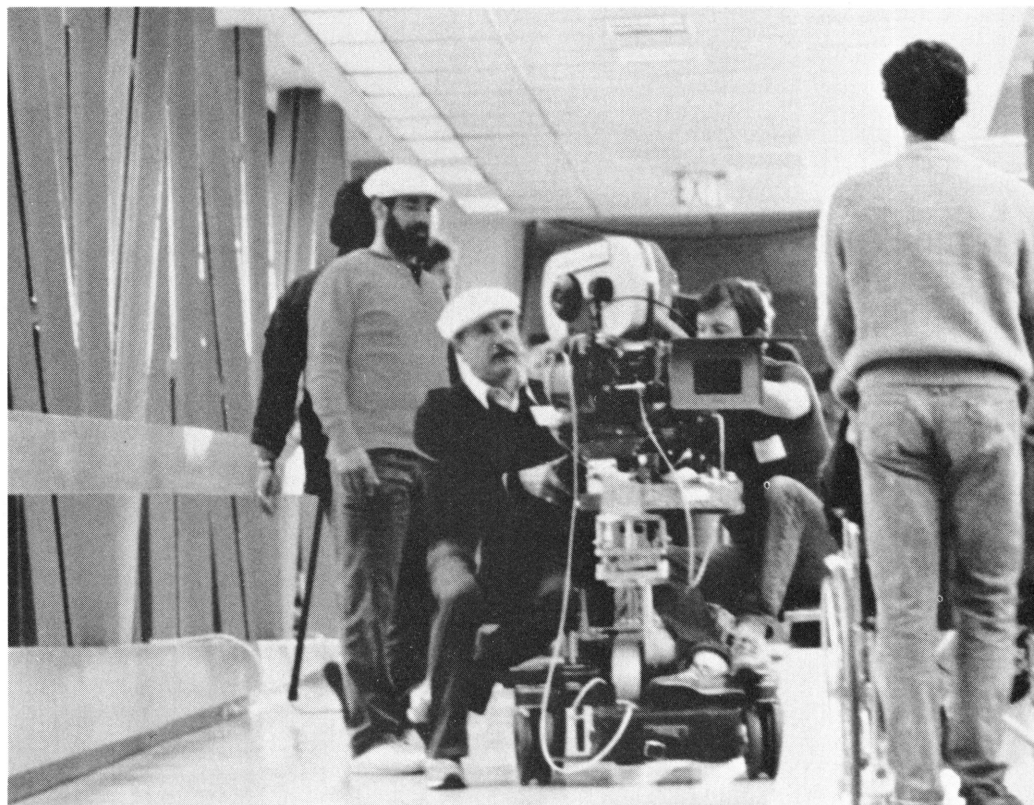
Film companies are working more and more in Chicago—and for good reason. Chicago has the locations, the technical crews, the labs and the extras. Something wonderful happens when you mix all these people together.

Choosing the right collaborators to help shape the director's vision is essential. In the case of *Nothing in Common*, the principal collaborators included Alex Rose (*Norma Rae*), director Gary Marshall (*Young Doctors in Love*, *Flamingo Kid*), and director of photography John Alonzo, ASC (*Vanishing Point*, *Chinatown*, *Scarface*, *Harold and Maude*). From there, the collaboration branches out much like a family tree, with each contribution as important as the next, from producer to production assistant.

The first unit camera crew requires exact timing and teamwork. This unit consisted of Alonzo; Pernell Tyus, camera operator; Horace "Hobbie" Jordan, first camera assistant; Bob Faison, of Chicago, second camera assistant; and John Miller, dolly grip, also from Chicago. How did this team get together? How do they relate to each other and to the other crew members? And how do they plan to move up?

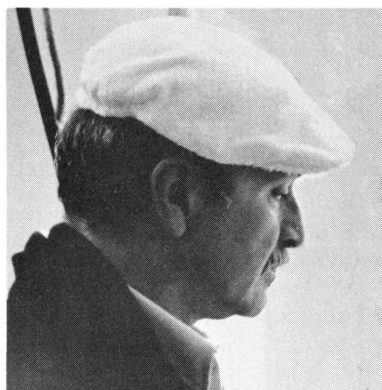
"I work very closely with the production designer," explains Alonzo. "I look at the location and the sets as they're designed. Then I say to him, 'I want scaffolding,' or 'I don't want scaffolding,' or 'I think the set is too big.' I contribute my photographic opinion to the art director; I work with the location manager and the director looking for locations.

"To a degree, I work with the assistant director, also letting him, again, know how long it will take to move from here to there, which is his responsibility; but my responsibility is to tell him how long it will take us to unload and set up and be ready to shoot at a different location. The director of photography is kind of the titular head



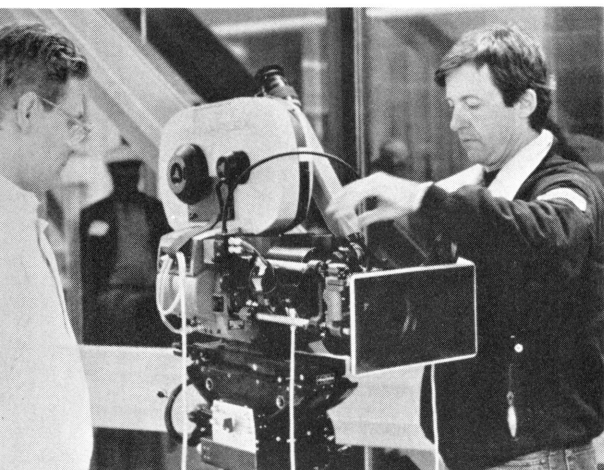
Photos by Karen Erbach

of the crew, in the sense that, because it is the camera that everything revolves around, they always end up asking the cameraman, 'Do you want the car moved?', 'Is the color of that dress all right?', 'Can she come in from this direction?', 'Is it going to mess up your lighting?', or 'Do you mind if we shoot it from this corner because of those fluorescent lights over there?'; or the production manager says, 'Do you mind if we move over here because I can't buy that house over there, and I can't rent it and use it in the picture.' So, they're always asking the cameraman. The director is the head of the whole thing, and even he has to sometimes ask the cameraman, 'Can the camera move A to B without any complications?' That's our knowledge.



Alonzo and crew photograph rehearsal. Below: Alonzo in a pensive mood.

Produced by Alex Rose
Directed by Gary Marshall
Photographed by John Alonzo, ASC



Hobbie Jordan, right, explains camera workings to intern Janusz Kaminski.

"What the producer wants to know from me is, can I help the director to move right along? Am I on time? Am I on budget? A lot of times the producer asks me to not necessarily 'police' the director, but to really help him and let the producer know where there are some problems, or what he/she can do. The producer asks that information of the production manager, the assistant director, the cameraman, and the other people who are the assistants to the director. That way he gets feedback from all those various departments and he can exercise his job better. The cameraman's job is a little more critical because I have a great deal of control over the time, and the producer can ask me, 'How long will it take you to set up and shoot three pages, or two pages?' The director's already told him from his standpoint; I'm telling him from the mechanical standpoint, the set-up time, and he evaluates whether we should do that scene that day or not."

The camera operator, Tyus, explains that his job focuses on the actual camera. "Basically, what I do is control the shot that has been set up by the director or the (director of photography); frame properly and watch for things that shouldn't be in the frame, then try and make a nice move with the camera. I'm in a learning situation as an operator learning to become a D.P., and I'm constantly watching everything that John Alonzo is doing. I question him about his lighting and his composition, why he composed a frame a certain way, because there are options on the frame, and 90 percent of them are a matter of taste of what *you* particularly like, and what will work within that frame.

"And so," Tyus continues, "I am constantly rehearsing, so to speak, all the time. Whatever the D.P. sets up, I will take and change to my taste and look at it and see why I would like that better than what he set up, or if I would agree with what he set up. Sometimes, when John sets up a shot, I look at it and maybe I don't like a small portion of it. I question him about it and see if, in fact, my idea would make a better shot. If it wouldn't, then I go along with his idea; he would explain to me why it wouldn't make a better shot or why it would be a better shot. So, it's merely a training process for director of photography."

When the time comes, Tyus will move on to become a D.P. There are several ways for the operator to get more experience in this direction. "Sometimes," he says, "you will get the opportunity to go out on second unit work on your own, without the D.P. He tells you what he wants, and then it's up to you to go out and get it done as if he were doing it himself."

Another thing that Alonzo offers is what he terms "step up day" in which everyone on the crew gets to move up the ladder; the dolly grip becomes second assistant, the second assistant moves up to first. The first assistant moves up to camera operator and the operator becomes the director of photography. Of course, all this done with the company's O.K., and under Alonzo's supervision.

Alonzo is, indeed, an unusual man in an industry that thrives on competition. Even the way he hires his crew is a bit unusual, as explained by Tyus:

"I got a job doing a commercial. Alonzo was doing a commercial the following day. At the time, his assistant, Hobbie, was on another spot and unavailable; so they suggested John use me. So we did his spot and a few days later did another spot. Prior to that day, I was sitting behind the camera playing with it, like all assistants do—I didn't realize that John was around. John turned to me and said, 'Are you ready for that?' I said, 'What?' 'Are you ready for that,' he repeated. 'I've been biting the bit for this for years!', I said. 'Of course, I'm ready!' So, we talked about it, the pros and cons—the good, bad, and the different parts of it, because one thing he stressed was the fact that I would not

work as much as an operator as I had as a camera assistant. You can bounce so much as an assistant, whereas you can't as an operator. So, we discussed it and I told him, I absolutely wanted to do it. He told me about this movie he had coming up, but he still didn't say he was going to move me up at that time.

"And so, we were over at Columbia pictures one day leaving the studio after watching some dailies. John said, 'There's Richard's car—let's go on in and see Richard.' I didn't know who he was talking about. So, we go into this office and there's Richard Pryor, his secretary and one of his writers. John said, 'Richard, this is Pernell Tyus, your new camera operator.' I didn't know what to say. And that's the way he moved me up—not by telling me alone, but by introducing me to his director, Richard Pryor, as his new operator." (Pernell Tyus was camera operator on the upcoming Pryor movie, *Jo Jo Dancer*.)

Hobbie Jordan met Alonzo 14 years ago, while still a student at USC. Alonzo, who had just finished *Sounder*, had come to USC to discuss the movie. Hobbie, who was very impressed with the cinematography, spoke with Alonzo after the lecture. "Little did either of us know that years later we'd be working together." Hobbie was a loader with Paramount Studio when Alonzo asked him to be an assistant on *Black Sunday*.

"It's nice working with Alonzo because he's open to ideas—some cameramen don't want to be bothered," says Hobbie, adding that Alonzo likes people to pay attention to other people's jobs; he assumes that they want to move up, so they should deal with the job as a learning situation.

Both Pernell and Hobbie agree that working with Alonzo has been a most valuable learning experience. He is a mentor who enthusiastically shares his experience. "He's not a man with professional jealousy," says Hobbie. In fact, he is consistently bringing along younger filmmakers. This might explain why he took on a personal intern in Chicago, Janusz Kaminski. Kaminski said that he could ask Alonzo anything about his techniques and Alonzo would take the time to explain. "Having interns might be unusual for other D.P.'s but for Alonzo, it's quite normal," says Hobbie.

So, although opportunities always arise on the set, it's people like Alonzo, who not only spot talent, but who can encourage it, who create a feeling of family within the industry. Bob Faison was originally assigned as second camera assistant on the second unit. Within the first week of starting, when both units were working closely, Bob was snatched up on the first unit camera crew as second assistant. "Sometimes, it's just good timing," said Bob.

What makes Alonzo take time out to teach others, to share his tricks and encourage young filmmakers to a higher level? He explains: "There's a lot of insecurity among cameramen because they feel if they do something a certain way, they don't want somebody stealing their ideas. But I don't agree with that. I think cameramen are not unlike painters. In the long run we can't know everything; and how everything is done is how *you* particularly apply it. I may use the same tricks that have been done for years, and there may be some eccentric tricks and ideas that I use. I don't mind anybody knowing about it because they may still take my idea, but they'll never apply it the same what that I apply it. Also, I feel that a free exchange of ideas only elevates the standard so that if there's better competition in my department, that makes me better and it makes them better. It eliminates the deadwood by continually raising the standards of the art."

Even the best director of photography could not shape his photographic vision without the contributions of his collaborators. Alonzo is the first to tell you so, and in the case of *Nothing in Common* he includes the local cast and crew.

Not only does John Alonzo trust his first and second camera crews to perform on a high level but he exhibits the same trust with his equipment. While working on *Nothing in Common*, Alonzo demonstrated respect for light by using it wisely, by not flooding the sets with light. He allows his fast lenses and film (Fuji-500) to work for themselves. Even in the bar scene where Tom Hanks and Eva Marie Saint share a sad moment, he doesn't force the scene. He lets it happen on its own. Instead of creating a colorless bar, Alonzo, with the consultation of Gary Mar-

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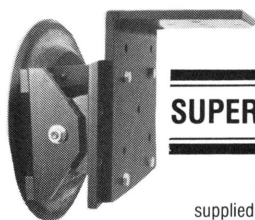
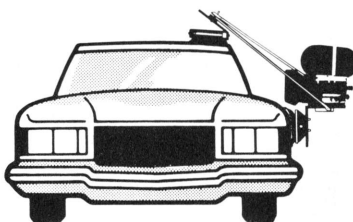
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shall, decided to shoot the scene, to what Alonzo refers to as contropuntal, meaning that there were still bright objects in the room, still the natural light. The same technique was also used in *Scarface*. What he is saying, is that sad or unpleasant things happen in bright rooms. John Alonzo shoots according to what the script dictates and insists that if the camera has drawn attention to itself in a script that doesn't need it, then the director of photography has not done his job well.

Asked if and how one could watch a movie and tell by the cinematography that it was done by a particular director of photography: "You can tell a Gordon Willis picture because he's been shooting similar types of things. You really shouldn't be able to tell. A good DP should be able to shoot a light weight comedy and go to heavy drama and they should all have different looks. They should be applicable to what the picture calls for. I don't think you can look at my films and say, 'Oh, that's John Alonzo.' There are some things I do, the particular way I light a

woman or the particular way I have compositions occur. But you'd really have to study it to know that it's my work. The only thing I avoid is any distorting architecture so that, photographically, it might look terrific but it doesn't have anything to do with the picture. I will try to shoot everything as the human eye sees it within the confines of a lens. In other words, the human eye sees with peripheral vision. But the human eye looking through a lens now sees within the confines of a frame. So what I try to do is use the proper lens to reproduce what the eye sees as close as possible, excluding peripheral vision."

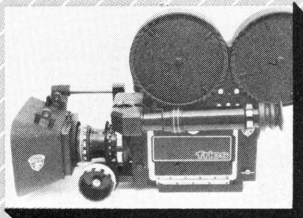
Alonzo was pleased with the people from Chicago and explained that there is rarely a problem in mixing crews. Even Chicago's Astro Labs pleased him, and he welcomed their personal attention.

With all these people involved in the making of a movie, one begins to wonder about the *auteur* theory. Alonzo had an opinion. "I don't really think it exists," he responded.

"Even David Lean, Roman Polanski, Kubrick, Peter Hyams and all those people that write, shoot, direct, even act as stars in their own films. They still need those extras, the prop master, the head hair dresser, the make-up man, the wardrobe man. Nobody can say he makes a movie by himself. It's a total collaborative form. Somebody can say he's a very good coordinator of all these talents; so, to a degree, he's an *auteur* because he selects the best of every department. He gets the best prop master, the best art director, the best make-up, the best cameraman and the best assistants. If he really does all those things, selects those people, knows how to administrate them, then to a degree, he's an *auteur*. But, still, *auteur* means singular, and that's not possible in the movie industry." △

Karen Erbach is a student at Chicago's Columbia College (Film Department) and also an intern at Rosen-Knutsen Casting in Chicago, the company which cast the extras for Nothing in Common.

MODERNIZED EQUIPMENT FOR MODERNISTIC FILMMAKERS



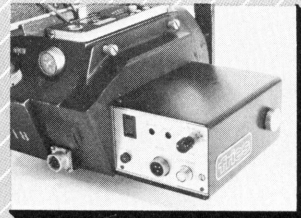
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McAlpine Chooses Cam-Remote Again

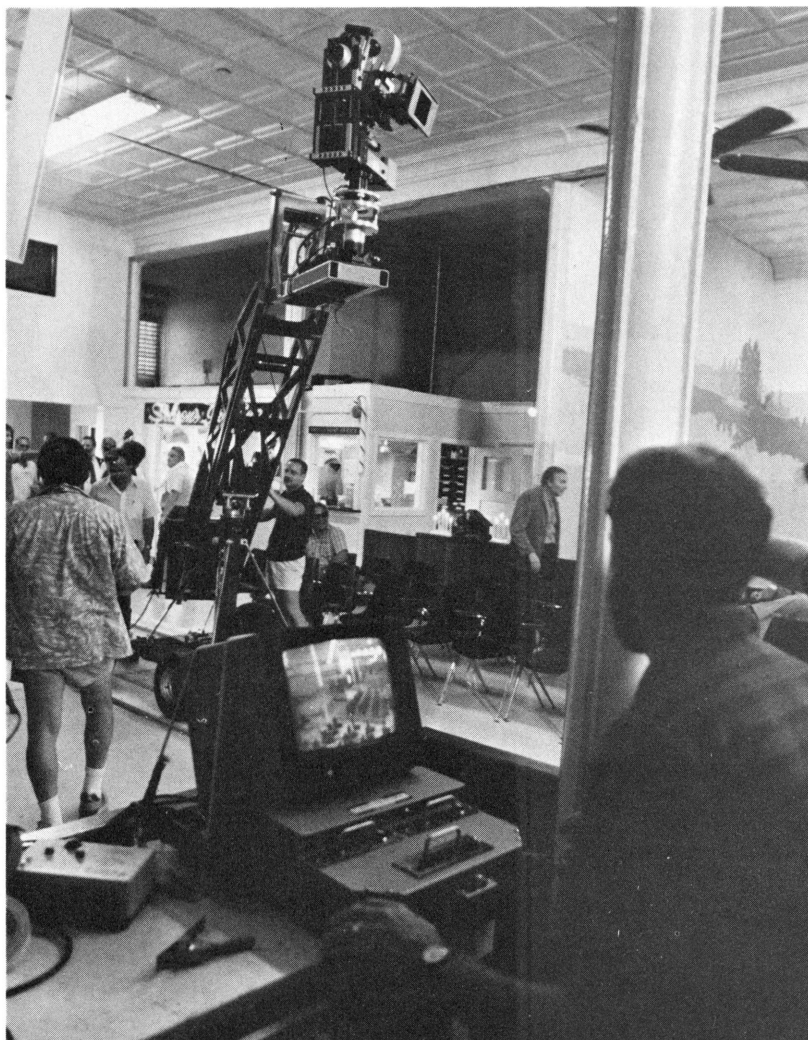
by Bob Krey

When cameraman Don McAlpine, ASC, completed Paul Mazursky's *Down & Out in Beverly Hills*, it marked the second consecutive film in which he employed the Nettmann Cam-Remote by Matthews as part of his standard equipment package. The Australian is best known for naturalistic photography of unassuming strength in the films *My Brilliant Career* and *Breaker Morant*.

McAlpine's decision to stock this particular remote-control camera head first on Bruce Beresford's *King David* and now on *Down & Out* suggests that the Nettmann Cam-Remote isn't only for virtuoso camera moves, but is more a tool for every man whenever a camera position will accommodate the size of the camera but not the operator. It's logical that style-brokers Spielberg and Coppola have stocked the unit on recent pictures. That Don McAlpine and Paul Mazursky have Cam-Remote on board for their latest comedy-drama implies that the remote head is also an asset for those with a more sober visual style, less kinetic script and simpler logistics.

Having designed remote control camera systems for aerial photography, E. F. (Bob) Nettman developed Cam-Remote with two goals common to most consumer electronics advances today: Greater portability through compactness, and ease and efficiency of operation. These qualities are essential to such products as hand-sized radio-cassette players and remote-control VCR's. Similarly, Cam-Remote serves those desiring optimal camera mobility and simple remote control.

Cam-Remote's 23"×29" dimensions and its ability to be mounted atop, under or completely separate from a crane define its mobility. When underhung from a Tulip crane equipped with extension arm, a vertical lens range from 8 inches to 20 feet is achieved. In this configuration the remote head sur-



Cam-Remote on the job.

Photos by Elliott Marks
passes a manned crane in minimum lens height, compactness and maneuverability through a crowded space since the crane arm is displaced above the camera. Both McAlpine and key grip Bobby Rose agree that Cam-Remote's most unique and useful attribute is the underhung or low-mode, and that it accounted for their most interesting shots in *Down & Out*.

While other remote heads offer underhung potential, Nettmann's

Produced and directed by Paul Mazursky
Don McAlpine, ASC, director of photography

electronics stand alone for ease and efficiency of operation. A single half-inch multi-pin cable carries seven or more functions between the control desk and the head. Operator and assistant's videotapes, pan, tilt, zoom, focus and iris controls are all carried



Camera examines Beverly Hills meal in close-up. Below: McAlpine on set.



through one cable, affording efficient set-up. McAlpine is enamored of how responsive the Worrall type controls are for his operator.

However, it was the unit's portability across off-road terrain and its economy against a Chapman Titan crane in a remote location which precipitated McAlpine's meeting with Cam-Remote in 1983. While preparing for *King David*, he found the cost of having a Titan crane in Italy prohibitive. Shipping a Titan from Los Angeles to Eng-

land costs \$12,000 one way. There would also be shots in remote off-road Italian locations where roads would need to be built to accommodate the Titan.

Knowing that he wanted the height range of a Titan while knowing there was no way that he could afford it, McAlpine set out researching remote heads. He found that mounting the Cam-Remote atop the Tulip crane equipped with extension arm yielded a 23" maximum lens height, which was essential to photographing a film of epic scope on expansive locations. Convinced of the unit's durability for handling a heavy camera with a thousand foot load, and impressed with its portability, McAlpine booked the Cam-Remote for the entire picture. "We had massive craning and booming movements in rugged locations. You can lug it up a hill vs. building a road" . . . for a Titan. He views the remote head's contribution to *King David* in certain terms: "We wanted the range of a Titan . . . We couldn't afford to carry a Titan. We could afford Cam-Remote. That's the truth." He summed up the *King David* venture with equal expanse:

"The Cam-Remote was a success. The film wasn't."

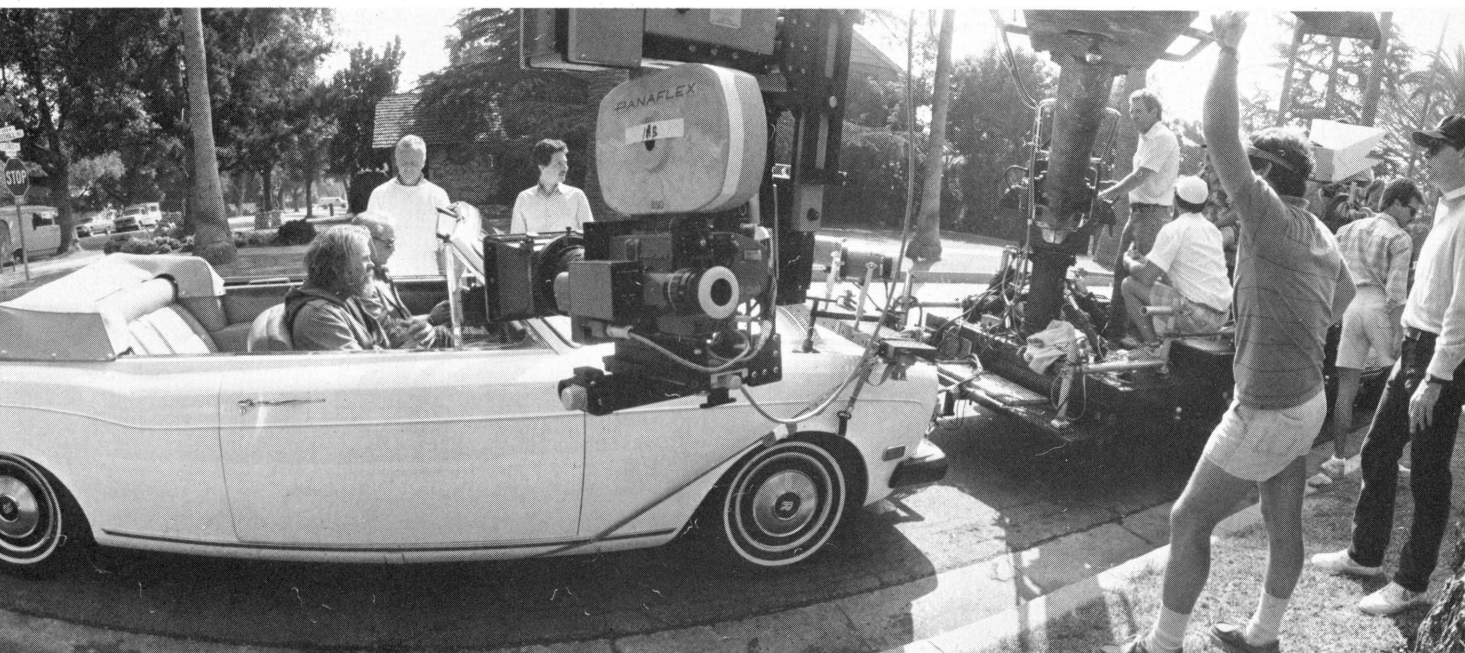
Thus equipped with enhanced camera mobility and economy, McAlpine grew closer to Cam-Remote, so that using the device became second nature. Nine weeks into photographing *Down & Out*, he described the remote head's place in his equipment package: "We carry it as a regular piece of equipment. We don't regard it as anything special. It's almost as fast to put together as other tracking equipment."

Down & Out in Beverly Hills is a comic drama one would envision as visually straightforward. It is situated mainly on the premises of a Beverly Hills estate which was faithfully recreated on a large stage at Disney Studios in Burbank. Mazursky cast Nick Nolte as a suicidal bum who takes board in the home of a sympathetic, wealthy couple played by Richard Dreyfuss and Bette Midler.

With three heavy-hitting personalities, and a film whose success depends on the potency of Mazursky's dark humor, there is little need, and no room left on the screen for the camera to assume a roving, separate personality. McAlpine agrees that "comedy is the hardest thing to film." Consequently, determining a proper visual style and consecutive camera positions is both difficult and integral to a comedy's success. The roots of the visual style to which Mazursky and McAlpine adapted the Cam-Remote hark back to McAlpine's first experience with a camera, and his recruitment by Mazursky.

McAlpine's previous occupation was that of a science and physical education instructor. He used motion pictures to analyze and improve the motions of athletes. At this early stage, his priority was placing the camera where it would reveal the most about the subject. After ascending the Australian film ranks from camera assistant at 28, his work as director of photography in *Brilliant Career* and *Breaker Morant* showed a refined gift at economical and simple camera placement. In both films the camera is compositionally strong, yet natural and inobtrusive.

Upon seeing the two films at an Australian film festival in New York City, Mazursky called McAlpine to invite him on board for *Tempest*. Next came *Moscow on the Hudson*, a



Mazursky film of typically light character-oriented drama accented with dark humor. *Down & Out*, the third consecutive Mazursky comedy-drama photographed by McAlpine, would then extend the economical, simple and natural visual style which attracted Mazursky years ago.

Down & Out would also reinforce the notion that in Mazursky's world nothing and no one are beyond humor. Once after McAlpine set up a shot then returned to speaking with a visitor, Mazursky took one peep into the viewfinder, then drew back and bel-lowed for all to hear, "You call this a close up!?"

Thus the visual style of *Down & Out* would need to echo Mazursky's overall buoyancy, while maintaining alignment with the specific dramatic conflicts and the heavyweight characters. A constant flow of new information to viewers via a moving camera is one way of achieving the lightness and minimal cutting Mazursky prefers. His interjection through editing is kept minimal by designing master shots which move to incorporate most or all of the emphasis points. McAlpine clarified their approach to *Down & Out* noting where the Cam-Remote would contribute. "A lot of humor plays well in stage style . . . just letting it happen, but it doesn't all play that way. There are no rules . . . where you need to counterpoint that proscenium-stage



Towing Dreyfuss and Nolte behind insert car. Enhanced shot selection and set-up time helped McAlpine.

style, you must go into a more cinematic concept when you have a chance. The concept that comedy needs a flowing camera that stays with people is very important." Thus the Cam-Remote would assist where lengthy tracking would preclude a cut and where a refined, cinematic move is suggested by a scene's blocking and the story's pacing.

One such night scene follows a strident Richard Dreyfuss from the landing near his bedroom down the open-air stairs, whisking across the house through one hallway to an adja-

cent one where he's stopped by Nick Nolte. The take continues after brief intercutting as the two walk the hallway into the kitchen. The Cam-Remote achieved economically what a manned crane could not; that is, it captured the entire scene continuously, amidst painfully tight quarters. McAlpine weighed the achievement in cinematic terms: "A lot of comedy arrives from one character reacting to another in a group. Interactions happen simultaneously. If you cut, you break the time." While he finds the Cam-Remote-Chapman Zeus crane



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combination excellent, using the Tulip crane afforded the needed space, and by virtue of its lightness, enabled more accurate tracking of the briskly moving Dreyfuss. "Because we lost the weights for the assistant and the operator, we could start it, move it and stop it a lot faster." Cinematically this is important because "to show that he's in a hurry to get to the maid's room, we have to be in a hurry with the camera."

To introduce a Thanksgiving dinner scene situated at a long banquet table, McAlpine used the Cam-Remote underhung from a crane to effect 'a more cinematic concept.' "Ten people sitting around having a meal is not the ultimate in visual excitement. It's pretty boring. We decided to use it to introduce the scene in an interesting way." Starting on Dreyfuss' son (Evan Richards), using a home video camera on the staircase, the picture camera moves down and back, leading him into the dining room as he approaches the table. The camera continues drifting back barely above Dreyfuss, revealing him from the frame bottom facing camera. It then booms down near eye level and slides back revealing the entire banquet table and party. The Cam-Remote helped transcend a compromise and simplified the challenge: "We wanted the camera as low to the table as it possibly could go. There was almost no way to do the shot without Cam-Remote or a major flying . . ." of set pieces.

In another moment of cinematic inspiration, Mazursky and McAlpine designed a single shot that shows a dog approach and befriend Richard Penniman (Little Richard) who is then revealed playing the piano at what is then revealed as Dreyfuss' New Year's party. With Cam-Remote in the low mode again the lens is placed three inches above floor level showing the piano and player's legs. The dog scampers from deep focus toward the lens, then settles at Little Richard's feet. The camera booms up along the piano revealing Richard playing profile to camera in a medium shot, then continues to eight feet high, establishing a deep view of the whole party. The low-mode afforded graceful style and cinematic economy: "In twelve seconds of boom time you've done what would take a minimum of eighteen seconds of cuts.

Generally, if you can avoid a cut, things are more cinematic, if you can keep the same feeling going. I think it's part of anyone's approach. If you can get the same information across in less time, that's the better way of doing it."

When *Down & Out* took a camera car onto the Beverly Hills streets to shoot Dreyfuss driving his Rolls Royce, McAlpine and Rose underhung the Cam-Remote from the insert car's crane arm. "I had a problem," McAlpine admitted. "A locked-off camera mounted on the side of the car creates an effect I don't like." Particularly, the feeling that the camera is part of the car and that it shares every bump and vibration is what bothers McAlpine. Crane mounted, the camera seems more free floating and independent from the car. McAlpine appreciates the mobility of the camera car - remote head combination. "Car mounts are the dread of every cameraman's life for the time they take to rig. My concern was that I had only two hours of consistent light. Once the device was set up it became easy to do a whole series of shots." The boom's mobility enabled rapid turn-arounds between reverse-angle shots of passengers. With the remote head, the ability to reach back to obtain a profile view of a trailing car affords greater safety, vital space efficiency on small roads and higher speeds, since the operator works from the car's deck.

One can easily view the rise of remote camera systems as the dawning of unlimited camera movement. More practically, Don McAlpine has used the Cam-Remote on two consecutive films because it helps him get the camera in the best place to tell the story. Behind every highly appropriate and inspiring Cam-Remote shot in *Down & Out in Beverly Hills* lies his sensible, essential vision of remote systems: "I call them cameras on a stick. Consequently, you can poke them in holes and little places you wouldn't poke an operator."

Information on Cam-Remote systems is available from Matthews Studio Equipment, Burbank, CA. △

Putting the Postal Service on Film

by Glen Percy

Super-16 is widely used in Europe as a production format for theatrical films and, more recently, it has attracted a limited following for the same purposes in the United States – Robert Altman's "Jimmy Dean" being the most prominent example of its use here. But shooting an industrial documentary film in Super-16 is unheard of.

Almost. My company, Glen Percy Productions of Washington, D.C., recently completed "We Move The Mail" in Super-16 for the American Postal Workers Union (APWU), and the reasons why Super-16 was chosen for a 22-minute documentary film with no theatrical release say much about the flexible use of this format.

Like many filmmakers who do sponsored films, I always conceive such projects backwards, because many of the production details will be determined by the film's function and mode of presentation. Who is the primary audience? What's the message? And – equally important – how will the finished production be shown – before small audiences with access to VCR equipment, or to large audiences?

In this case the film was to have a general release throughout the union in 16mm and $\frac{3}{4}$ " and $\frac{1}{2}$ " videotape. But the first showing of the film was to be at the union's national convention at the Las Vegas Convention Center, where they expected three or four thousand delegates and guests for the premiere. The hall where they would be meeting is about 225 feet square. The only way to show a film to such a large audience is on a very large screen. And there would be no way to make the room as dark as a theater – not only would there be scattered light from other areas of the Convention Center, but in such large halls a minimum level of ambient light is required for safety reasons.



Letter sorting machine in operation.

Photos by Eric Poggenpohl

Such circumstances virtually demand a 35mm print. There is simply no way to project sufficient light through a 16mm gate to illuminate a large screen to a satisfactory level under such conditions. Yet there was also no way our client could afford a 35mm production.

And even with an adequate budget, the production demands of such a documentary film would make 35mm production impractical. We wanted to show the members of the Postal Workers Union on their jobs. But the Postal Service was not happy to have us filming in their facilities in the first place,



Pearcy shoots an interview of a postal worker in New York City for industrial documentary. Sound mixer Bob Sullivan is at left, producer Al Madison at right.

and a large crew with the kind of lighting and support equipment 35mm requires would have scared them off. Moreover, they made abundantly clear that they would not permit any disruption of their employees' work. We couldn't ask people to alter or repeat operations – we weren't even supposed to talk to people on the floor without a supervisor's permission. It was clear that a small crew shooting with available light and able to move quickly – often shooting handheld – would offer enormous practical advantages.

The obvious solution to these conflicting production/screening demands was to shoot documentary-style in 16mm and to make a 35mm blow-up of the finished show. And, in fact, we had prior experience with this approach in similar circumstances. Two years earlier we had produced a similar project for the American Federation of State, County and Municipal Employees (AFSCME) and premiered the film at that union's national convention in Atlantic City. They had almost 5000 delegates and guests, so we brought in a special 40' x 50' screen – it was the only way the entire audience could see the picture. So, while we shot the film in regular 16mm format, we made a 35mm blow-up for the premiere.

As the Postal Workers project began I suggested a 35mm blow-up to my client for the same reasons. But the more I thought about the film, the more I figured as long as we were doing a 35mm blow-up, why not shoot in Super-16 and do a wide-screen presentation. I felt that matching the format people are accustomed to seeing in a theater rather than the format they see in regular 16mm productions had to give the film a special feel. Such a feeling may be subconscious, but I am convinced it has an impact.

But what would producing in Super-16 rather than regular 16 entail? Would the complexities be prohibitive for a documentary film with a limited budget?

The first consideration was, of course, the camera. I already owned an Aaton 7LTR camera, but it was not configured for Super-16. Newer Aatons come delivered with Super-16 capability, but on my older camera it was an option I had not ordered at the time of purchase. But Zellan Enterprises in New York, where I bought my camera, offers Super-16 conversion as an add-on option. First problem solved.

Furthermore, once modified, converting the camera back and forth between the standard 16 and the Super-16 configurations is not difficult. I prefer to have Zellan's do it, because

they can check the critical back-focus each time to make certain it has not been altered. But being over 200 miles away from Zellan's offices – and having standard 16 assignments arise in the middle of this Super-16 project – required that I be able to change the camera back-and-forth myself when necessary. So Guy Genin at Zellan's showed me how it's done. This ease of regular 16/Super-16 convertibility is but one example of the thoughtful design of the Aaton camera.

The next step was to work with a lab. Well aware of Du Art's reputation for pioneering Super-16 and supporting projects shot in the format, I went right to David Leitner. Leitner is Du Art's chief camera and lens technician, and he gave me the most important advice for this production: Overexpose! He explained that a 16mm negative with good density enlarges to 35mm much better than one that is thin. Colors saturate better, and grain decreases dramatically as negative density increases. Since we were planning to blow this show up to 35mm and put it on a large screen, absence of grain was critical.

The grain question was especially important because much of the film would have to be shot in available light under adverse conditions. We eventually secured permission from the Postal Service to shoot in the GPOs [General Post Offices] in a number of cities – New York, San Francisco, Wichita, Kansas as well as Washington, D.C. These facilities are enormous – Morgan Street Station in New York is ten stories tall and takes up an entire city block; San Francisco's GPO covers thirty-two acres. Like most industrial locations, these sites do not enjoy studio quality lighting. And of course there was no way we could light the enormous spaces we needed to show.

This dictated extensive use of Eastman high-speed negative type 7294. But we didn't want to push this stock, because we were trying to hold the grain down for the 35mm blow-up and projection. Rather than push it, we needed to *overexpose* it.

Zeiss Super-Speed lenses were the solution. Almost all of the material shot in these large GPOs was shot with Zeiss Super Speeds. Not only

are they very fast – we were able to overexpose the 7294 stock by a half-stop most of the time, shooting between T/1.3 and T/2 – they also cover the Super-16 format. That's exactly the combination we needed.

Exteriors or situations which we were able to light were shot with the Cooke 10.4-52mm zoom or an Angenieux 12-120. The sharpness and contrast of Zeiss and Cooke lenses, rented from my assistant cameraman Bob Sullivan, were especially dramatic when the film was blown-up to 35mm. The Angenieux – and older model T/2.5 – performed well also, and the fact that this standard lens covers Super-16 for much of its range is a real boon to documentary filmmakers contemplating a Super-16 production. And the quality of the 7294 stock is so good that we were even able to cheat a few shots with the zoom lenses inside the GPOs.

Once shooting began the advantages of a 16mm production format rather than 35mm became obvious. For example, we wanted to give a sense of the pressure of the job in the facilities. Millions of pieces of mail pour in each day and are processed through miles of fast-moving machinery. In many cases the postal workers do not control the speed at which the equipment operates – they must adapt to a machine speed set by the supervisors, and keep up with that pace. The work scene is noisy and active and full of production pressure – machinery grinding away incessantly, tons of mail moving in all directions, workers struggling to keep pace with the demands.

To adequately capture this demanded camera movement – and it almost always had to be hand-held, because the cramped quarters and the nervous Postal Service management meant dolly shots were out of the question. And filming the movement we wanted – mail surging across a moving belt or down the throat of a computer controlled sorter – often required holding the camera over the equipment, away from the eye and extended from the body, and then moving the camera with the mail. Under these circumstances, shooting would have been impossible in 35mm.

The next step in the production process was to figure out how to

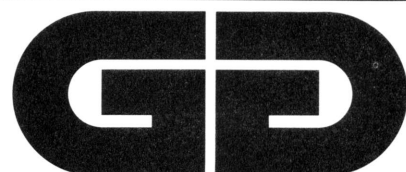
cut the film in its Super-16 format. I had read an article in *American Cinematographer* about a year earlier [April, 1983] about John Sayles' production of *Lianna*. Even though that film was to be blown-up from 16 to 35 for theatrical distribution, Sayles decided to shoot in regular 16 because he felt the difficulties of editing in the Super-16 format were prohibitive. I have a six-plate Moviola and began to think Sayles was right when a check with a company representative informed me that they did not offer a Super-16 conversion for the machine. I had visions of cutting the show on my Moviola without being able to view 25 percent of the work print. [Super-16 achieves its widened format by extending the picture into what is the soundtrack area on regular 16. Of course this part of the negative is not visible on a regular 16 editing system.] But a few phone calls revealed that Cinergy in New York had converted Steenbecks for Super-16 – so we rented one from them and hauled it down to Washington.

The quality of the Cinergy table surprised both me and my editor, Leland Price. It had the brightest, sharpest image we had seen on any 16mm editing table. I have no idea how they were able to widen the image and improve its quality at the same time – but they sure did. It made cutting the show a pleasure.

Next was the problem of mixing formats. While the majority of the show was to be Super-16, there were substantial historical sections in which the original material was standard 16mm. This included very old black & white material from the National Archives in Washington (some of it reduced from 35mm original), and more recent color reversal scenes of the 1970 postal strike from the Sherman-Grindberg Library in New York.

All this material was in the standard 1×1.33 format. So when it was blown-up to 35mm it had to be cropped on the top and/or bottom to match the Super-16 1×1.66 format.

When it came time to do the regular 16mm CRI of the show, the problem was just the opposite: The historical and library footage was in the right format – regular 16 – but the newer Super-16 material had to be cropped on the right and/or left and squeezed back down to regular 16.



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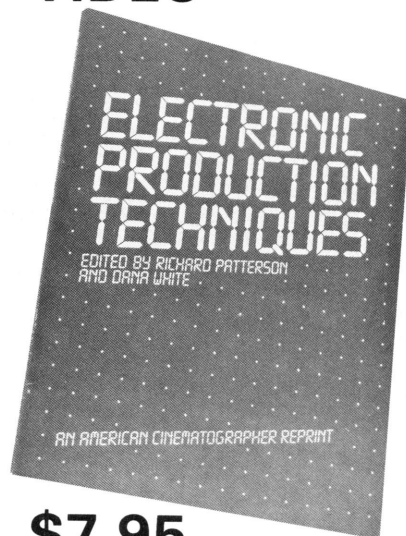
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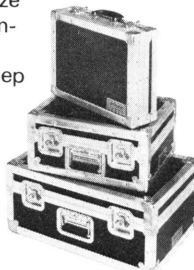
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The problem was compounded by the mixture of different emulsions. In addition to the 7291 and 7294 emulsions used for the Super-16 part of the show, there were black & white negative from black and white original; color negative from black and white original; and color negative from color reversal. Lastly, we did the main and end titles of the show in 35mm, to achieve the highest possible quality for the 35mm print. This meant that when the time came for Du Art to make the 16mm CRI it required eight passes through the optical printer: two for the "A" and "B" rolls of Super-16; two for regular-16 black and white negative; two for regular 16 color negative from black and white and color reversal; and two for the 35mm titles. Thus it took much more time and work to produce a 16mm CRI than the 35mm.

With the exception of the problems created by mixing Super-16 and regular 16 formats, none of the demands of a Super-16 production created serious problems. And the results were well worth the extra effort. The wide-screen 35mm print Du Art produced is spectacular. I was really quite surprised at how close Super-16 comes to film shot originally in 35.

David Leitner at Du Art taught me much about how this is possible. Perhaps the most critical factor is the Super-16 format itself. I had assumed that most 35mm wide-screen films were shot anamorphic, taking full advantage of the entire 35mm negative area and 'unsqueezing' the anamorphic image at project to achieve the wide-screen effect. Leitner explained that this is not always true. Many theatrical films are shot in the standard 1x1.33 format and simply cropped with a 1x1.85 mask in the projector. Suddenly I understood how Super-16 begins to compare so favorably: while the Super-16 image is being enlarged by 25 percent, a show shot in 35mm is being reduced by an equal amount at the time of projection. Thus the two images are approaching each other in size - making a Super-16 blow up much closer in quality to a 35mm original.

Of course there are other factors: The rock-steady image the Aaton delivers - which is critical when you go to a blow-up; the marvelous sharpness and contrast of the Zeiss and Cooke lenses; and all the improvements Kodak

has achieved in negative film emulsions over the past decade. This is especially obvious in the 7294 material. By over-exposing a half-stop or more, I found that 7294 achieves a richness in color and a reduction of grain that approaches 7291. There are parts in the film where 7294 is cut against 7291 and the difference is noticeable only to the trained eye – or to the cameraman who shot it.

I am equally enthusiastic about the Zeiss Super-Speed prime lenses, especially for this kind of production. The big post offices we shot in are not only dim, they also have a difficult mixture of light – fluorescent, incandescent and a variety of industrial vapor lights, all producing different colored light. The Zeiss lenses tended to saturate and exaggerate these different colors, splashing unexpected hues on background walls and yielding some striking and beautiful effects not apparent to the naked eye.

It is all of these factors combined – the efficiency of the Super-16 format; the adaptability of the Aaton camera; the extraordinary quality of the new film emulsions; and the availability of fast lenses that cover the Super-16 format – that make producing films in Super-16 such an attractive possibility. For documentary purposes, the fast, high-quality films and lenses are especially important, for they have taken available light shooting to a new plateau. For now it's not just "possible" to shoot an available-light 16mm documentary under difficult conditions, it's also possible to achieve very high quality images – images capable of being blown-up to wide-screen 35 and comparing quite well to 35mm original.



The production, We Move the Mail, won the Golden Hugo award in 1985, the highest honor given at the Chicago International Film Festival.

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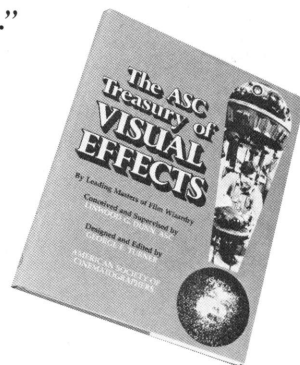
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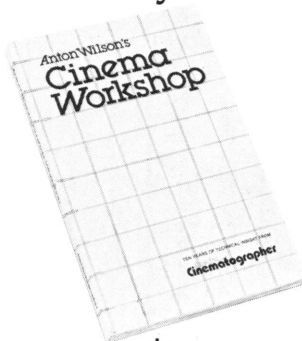
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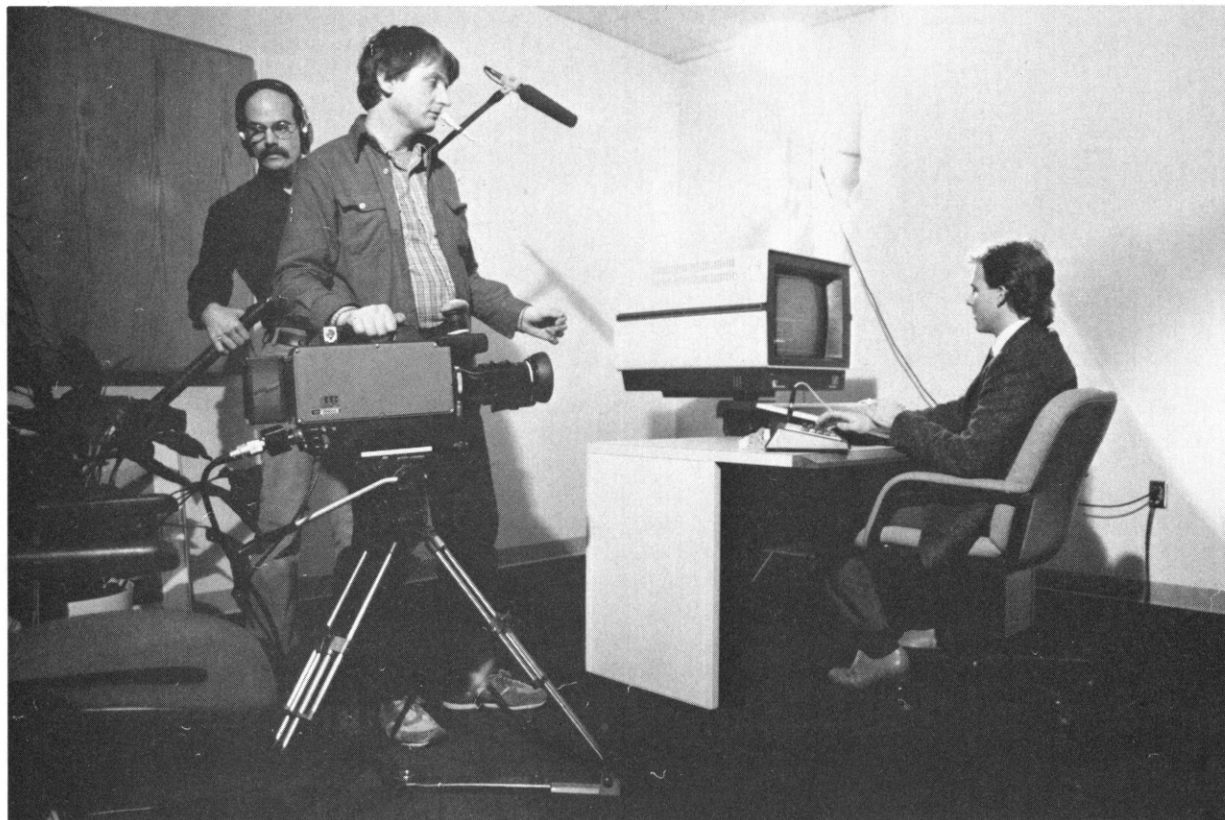
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Videotape for *Robotics Revolution*

by Thea Chalow



Engineer Eliot Golman and cameraman Peter Brownscombe set up to shoot computer aided design system operated by Gavin Stearns.

What happens when NOVA, public television's award winning science series, begins to explore the new technologies both in front of, and behind the camera? The result is, *The Robotics Revolution*, an hour-long documentary examining the impact of high technology on the business environment. The show breaks new ground for the long running series because it debuts the use of high speed half-inch videotape for a NOVA program.

"Video production is the wave of the future for the documentary, if not the present," asserts NOVA producer/director Brian Kaufman. His assessment reflects a major change in the status of electronic field production (EFP) for high quality programming. No longer a second class citizen, EFP is

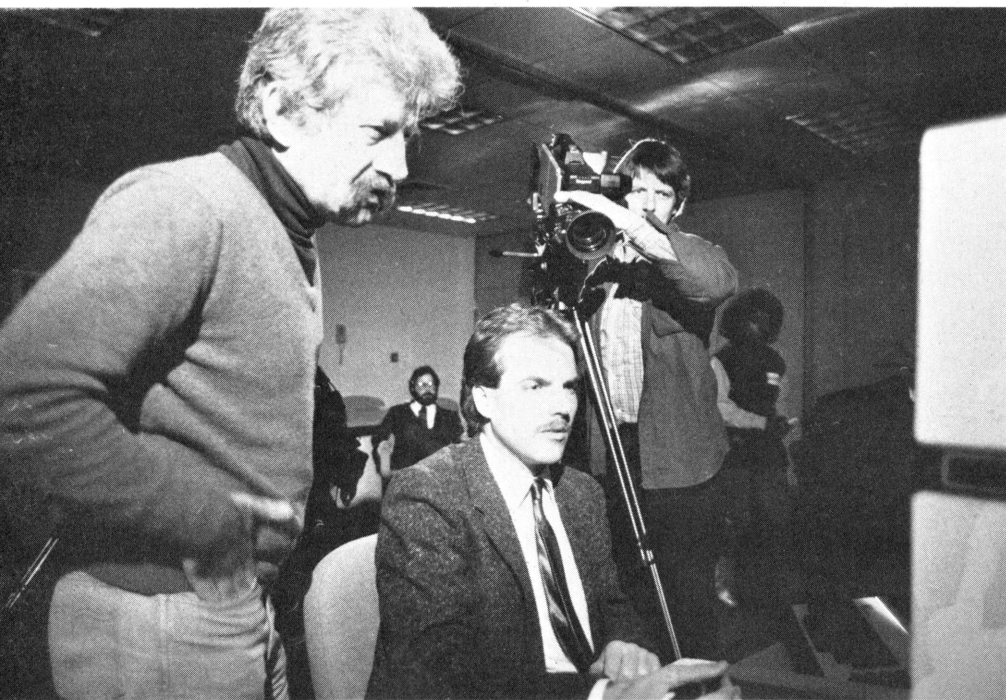
now competing successfully in the prestigious documentary market long dominated by film.

Kaufman is, himself, an unlikely videotape pioneer. Trained as a documentary filmmaker in England, his career has spanned more than two decades. Before joining NOVA in the late 1970's he had won numerous international awards, all for film projects. Recently, while speaking from an office cluttered with the artifacts of nearly a dozen NOVA programs, he reflected on his approach to visual story telling. "I've always been concerned about quality, and nice images, and lighting, which is why I've always used film. I've always considered tape to be inferior in those aspects."

But technological change, both inside and outside television, led

him to produce his first videotape documentary last year. In 1984, a demonstration of the new high speed Beta format at a Director's Guild conference in Halifax, Nova Scotia had caught his eye. "I was impressed by it," admits the veteran filmmaker, "and particularly by the consensus that this was as good as one-inch, and much better than 3/4-inch."

His interest in the new tape technology converged the following year with a program on high technology. His own transition from typewriter to word processor had sparked an interest in computers. "I wanted to know what they did, what they held for the future, and how they would change the world." Kaufman knew a central theme in his



Brian Kaufman looks on as Stearns demonstrates system for Brownscombe.

program would be adaptation to change, and felt it was the ideal circumstance for his own transition from film to video. "As things are moving to tape, I decided to do it on tape, so I would keep moving with the times."

After receiving the nod from NOVA's Executive Producer, Kaufman immersed himself in the rigorous editorial research common to all programs in the series. Two months were devoted to studying computers, robotics, and automation, and to speaking with experts throughout the United States. Simultaneously, he explored the state of the art in electronic field production.

He consulted with Eliat Goldman, a Boston area free-lance engineer who specializes in EFP. In addition to varied credits such as "Frontline," "20/20," and HBO specials, Goldman had recorded audio and video for two previous NOVA programs on one-inch tape. "You get excellent quality, of course, with one-inch, but it can be cumbersome for documentary style production," he explained, "and while 3/4-inch is adequate for news gathering, it has real deficiencies when it comes to documentary production."

Goldman was enthusiastic about the Beta format, "Sony's system of component color (Y, R-Y, B-Y) provides high quality color resolution, with a good signal to noise ratio, and their Dolby C audio offers decent perform-

ance." Kaufman confirms, "It was a combination of equipment that was almost as portable and convenient as 16mm film, and quality that was better than 3/4-inch that made videotape production appealing."

Maintaining the look of film was important to the project, so Goldman suggested using the Ikegami HL-79EA, because of its ability to handle high contrast lighting ratios. He explained, "The 79EA's dynamic knee makes it capable of handling exposure in a manner similar to that of film."

An adapter was required to use the Ikegami camera with the Beta recorder. The adapter directly converted the 79-EA's RGB outputs to the Y, R-Y, and B-Y components. Using this system, the quality of the video signal was preserved, since it was not converted to NTSC encoded color until the final on-line editing onto a one-inch master.

Kaufman hired New York based cameraman Peter Brownscombe for the project. Originally trained as a still photographer, he had first begun working with video at KTCA-TV, Twin Cities Public Television, in Minnesota. "My approach was simply to treat videotape as another kind of emulsion. I didn't really think of it as an electronic camera." He soon received national attention for "Nuclear Outpost," a compelling *cinema verité* portrait of life at the Strategic Air Command base in

Minot, North Dakota. What Kaufman liked most about the young videographer was "his lighting was the sort of lighting you'd expect from a good film cameraman."

While Kaufman drafted the shooting script, associate producer Salem Mekuria prepared a detailed budget. Several key differences between film and tape appeared. A major savings was the ability to work with a two person, rather than a three person, crew. "With film," she explained, "you need an assistant cameraman to load and unload film magazines while you're shooting. When you add up the cost of an AC's salary, plus the airfare, hotel, and meal per diems you're looking at several thousand dollars."

Regarding the budgetary process, Kaufman recalled, "One thing that impressed me was the cost of the equipment, which was considerably higher than film equipment." Queries to several suppliers, however, uncovered that "rentals were sort of funny. The per day rental basis was vastly higher, but all the rental houses seemed to come down very quickly over a longer period, and that descent was much more marked than for film equipment." The budgetary solution was to plan for one long shooting trip so that a reduced rental could be negotiated, making the video equipment comparable to that of film equipment.

Overall, they found the videotape budget about 10% lower than a similar film budget, with the primary savings being: (1) reduced crew and travel expenses; (2) lower stock costs (about \$12 for a 20-minute cassette versus nearly \$250 for the equivalent film and processing) and (3) the elimination of syncing, answer prints, negative cutting, opticals, and release prints.

A three week shooting schedule was planned to take them to 16 locations in a dozen cities providing a rigorous test for the crew and equipment. After picking up the equipment package from Broadcast Video Rentals, Ltd. in New York, they flew to Detroit, Michigan.

Shooting the automated assembly lines of the Motor City, Kaufman first enjoyed the convenience of seeing shots on a color monitor. "With film, I always wanted to look through the camera. As director, I'd be ducking in and out, looking through the view-

finder to see the framing, to discuss it, to change it if necessary. With video, I could see exactly what the cameraman was doing on the monitor, so it was quicker to get the shots set up. It was easier to talk with the cameraman, too, because you were talking the same language, seeing the same things."

Some of the Detroit sequences involved shooting fiery welding performed by programmed robots. With earlier generations of video cameras, direct shooting of light sources, such as the brilliant welding arcs, was a problem. Notes Goldman, "The diode gun Plumbicon tubes in the 79-EA handled the task admirably with minimal burn-in and comet-tailing."

At their next location, a John Deere tractor plant in Waterloo, Iowa, the crew found themselves working in sub-zero temperatures. The camera and recorder operated flawlessly, even in the bone chilling cold. Inside the facility however, they faced a major lighting challenge.

Kaufman recalls, "We wanted to show a mechanized materials handling system in which robots traveled through an open, seven story high warehouse, collecting parts out of metal cages." Because the facility was designed for machines, and not human workers, there was little available light. Cameraman Brownscombe turned this obstacle to his advantage, by scattering his lights, plus a few borrowed from the factory. Then, crew and equipment boarded a robot while it traveled through the cages. By moving close to their subject, and traveling through the darkness past pools of light, they captured the eerie vastness of the automated warehouse. "The lighting worked out very nicely," assessed Kaufman, "and made it look quite spectacular."

They moved on, shooting in Utah and California's Silicon Valley. A day off in San Francisco provided time to evaluate their tape before starting the long eastbound leg of their journey. Kaufman found his shooting ratio higher than normal. First, he noted, "another tape is just another few dollars, as opposed to a few hundred," but second, he found the technical requirements of videotape demanded a change in his shooting style.

Kaufman was familiar with a film camera's nearly instantaneous start-up, and was unaccustomed to vid-

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eotape's preroll. Comments Goldman, "It takes a while for film people to adapt to the idea that when I say 'tape is rolling,' they can't call for action until I confirm speed." This is necessary because on-line editing computers often need up to ten seconds of uninterrupted video before an actual edit point.

At first, Kaufman found the wait disruptive. "When you stopped, the five to ten second delay in starting again interrupted the flow of things, so there was much more tendency not to stop the camera. You just kept rolling, which inflated the ratio by quite a bit."

Brownscombe agrees that videotape tends to inflate shooting ratios. In particular, he found working with the rigidly programmed robots a challenge. "If you missed something, you couldn't say, 'would you do that again,' because the machine had a mind of its own. I guess the advantage with tape is you can afford to shoot more, and reel changes are quick and easy."

During the shoot, the crew was pleased with the performance of the equipment, although Goldman found some complications in operating the VCR in the two piece configuration.

"The Sony BVV-1 is designed to operate as part of a one piece camcorder," he explained, "so when it's used in the two piece configuration, the VCR's audio meter and gain control are inaccessible. In addition, the head phone jack on the BVV-1 provides confidence or delayed audio only, which is Dolby C encoded, but not decoded, causing an altered frequency response and dynamic range."

To solve both problems, Goldman fed the audio through a mixer which provided a clean feed for headphones and easy access to the meter and controls. The Beta machine was then checked regularly to verify that audio was, in fact, being recorded.

Another inconvenience of the BVV-1 was that it is a recorder only. In order to review field tapes, they were obliged to carry a separate player. Shortly after the NOVA shoot was finished, Sony introduced the BVW 25, a portable recorder/player which is designed to meet these audio and playback requirements.

With shooting completed, the half-inch masters were dubbed onto 3/4-inch cassettes with visible SMPTE for off-line editing, and written tran-

scripts of all interviews were prepared. Leading the editing team was Eric Neudel, who has cut more than a hundred films, from features to short subjects. In recent years, he has worked on an increasing number of videotape projects.

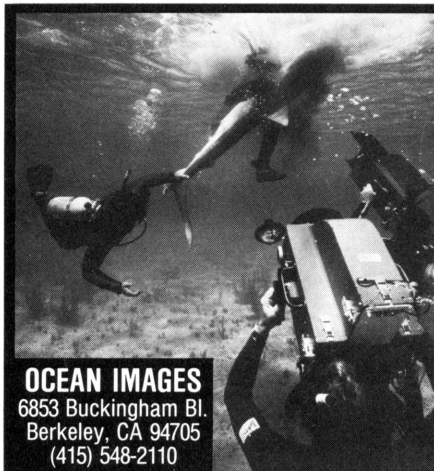
Neudel believes there is a major difference in the style and pattern of editing tape as compared to film. "With film, you physically handle the shots. Much of your organization is spatial. If you're looking for a close-up, you know it's in the bin behind you, on the left side, the second pin from the end. With tape, locating a shot is a more abstract process. Your close-up is some SMPTE number. You insert a cassette, press some buttons, and wait for the machine to find it. You can lose a lot of time if you don't have good logs."

Managing the large volume of material was the first order of business. Tapes were organized by sequence, and good takes logged and dubbed onto a work cassette. Then a rough cut of each segment was prepared from the work tape.

Kaufman found the early stages of videotape editing went faster than film. Neudel says, "The structure is very different. With film, the process is very fluid and languid. You assemble everything, then slowly remove what's irrelevant, and a visual structure evolves. Editing tape is more like building a pyramid. First, you make lots of little blocks, then you stack them up. With each tier you narrow the blocks you're using, and when you get to the top, you've finished the show."

As editing progressed beyond the rough cut stage, Kaufman found the pyramid analogy appropriate, but for different reasons. "Monumentally and massively slower" was his judgment of the fine cutting process. "When you get to the second half of editing, making all the little changes which are so easy in film, becomes quite horrendous on tape. When you're up to an hour in length, and you want to make small final changes - insert a piece here, or take out a piece there - you're in trouble." As segments were dubbed to allow for new inserts, image quality deteriorated and SMPTE numbers often became unreadable, requiring entire segments to be re-laid from scratch.

Although Kaufman was frustrated by the delays and difficulties in the fine cutting process, he remains



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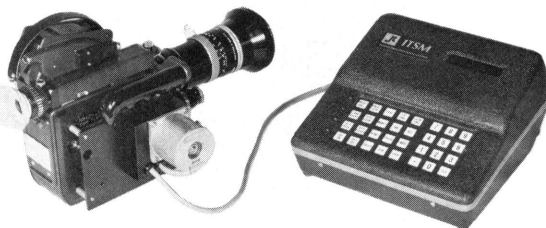
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optimistic that technology will solve the problems. "Presumably we have every reason to expect that once you can get onto discs the whole problem of putting in inserts will be solved."

Not surprisingly, another aspect of new technology employed for the show was electronic graphics and animation. Observes Kaufman, "The idea is that computer animation is quicker, better, and cheaper than old fashioned cell animation." Several lengthy sessions generating electronic imagery, however, gave him a different point of view. Reports Kaufman, "I've come to realize that computer animation is slow, cumbersome, and just as frustrating as regular animation, and certainly as expensive, if not more so."

While he now feels electronic animation is not necessarily better than film animation, he still feels it is the wave of the future. "I would expect more and more computer graphics simply because it's tape, rather than any other reason. That's the way things are going."

Off-line editing of the program was completed by Dick Bartlett when Neudel had to depart for a prior commitment. Bartlett has worked extensively with both film and tape, recently editing new video episodes of, "Jean Shepherd's America," for PBS. Working with Kaufman, he brought the program to picture lock and completed preparation of the SMPTE logs for on-line editing. Comments Bartlett, "The hardest part was getting the numbers for all the little pieces of voice-over material you've hidden behind the picture."

Broadway Video in New York City was selected for the on-line editing of the half-inch Beta field tapes onto a one-inch master. Although the editing suite had sophisticated DVE available, Kaufman chose to make minimal use of effects in the body of the program. "I didn't see any particular need for them," he says with proper British reserve. "Often they're used for no real purpose except to be jazzy, and instead they're just jarring. In that sense, I stay conservative."

To achieve a film style sound mix the NOVA team began audio work during the on-line editing. Sync sound was laid in a checkerboard fashion on the two audio tracks of the one-inch tape. When the edit master was completed, a 3/4-inch cassette dub with

visible SMPTE was made. This "master dub" was taken back to the off-line suite where track work was begun. "In general," observes Bartlett, "the track work on video goes faster than film." Several copies of the "master dub" were made, each providing two audio channels. Then, each track on each cassette received an assignment: voice-over, narration, music, effects, and so on.

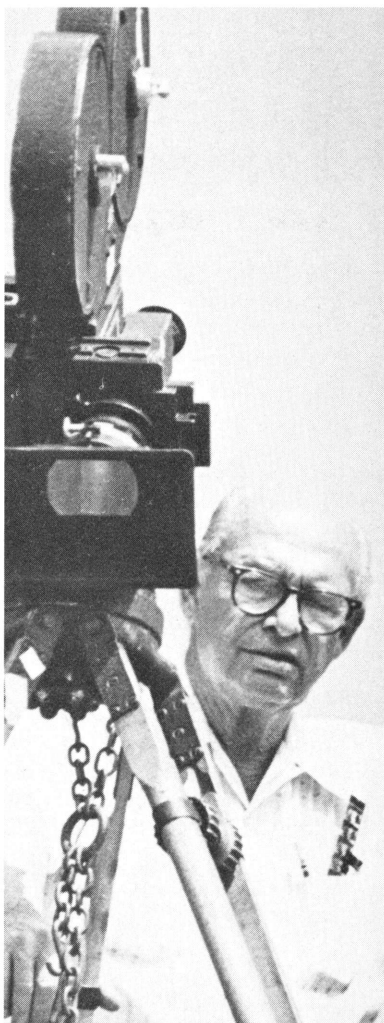
After each sound was positioned and SMPTE number logged, they moved into WGBH's mix suite. The facility is designed for both film and videotape projects. With 16 tracks available, they first laid down the sync sound from the edited one-inch master, then added voice-over material, music, effects, and narration on separate tracks. The multiple tracks were then mixed down in a manner similar to that used for film sound. Finally, the mixed audio track was dubbed onto the original one-inch picture master, allowing for the marriage of traditional film style sound to video's high technology picture.

After traveling the bumpy road of a video explorer, you might expect a veteran filmmaker to become nostalgic when asked if his next project would be on tape or celluloid. But Kaufman is convinced that video is a fully competitive medium, saying, "If it was going to end up on television or cassettes, then I'd do it on tape. There's no reason that I would see now to do things on film, unless the film format was going to be used in distribution."

As the title of the NOVA program suggests, technology is revolutionizing the American workplace, not only in manufacturing and industry, but also in the media marketplace. Electronic field production is now a first class competitor on the small screen, having gained parity with the sights and sounds of high quality film production.

"Robotics Revolution" was broadcast on most PBS stations Tuesday, October 29, 1985. NOVA is produced for PBS by WGBH Boston, and is made possible by grants from public television stations, Allied Corporation, the Johnson & Johnson Family of companies. △

Thea Chalow is a former member of the NOVA staff and a Massachusetts author.



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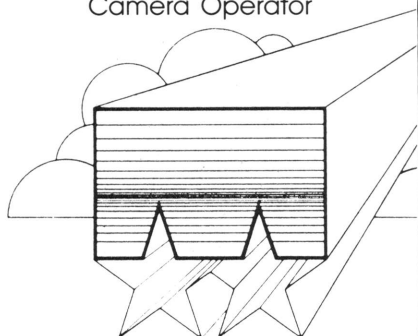
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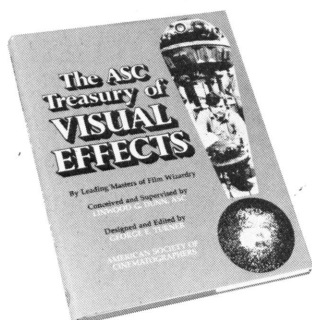
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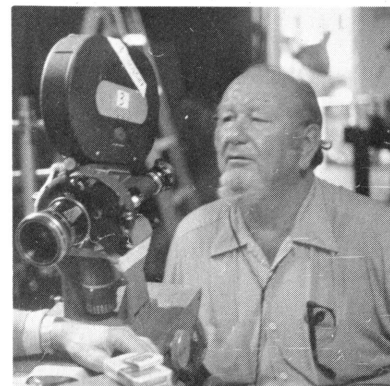
In Memoriam

Lamar Boren, ASC, a director of photography best known for his undersea work, died January 15 following a heart attack. He had retired from moviemaking three years ago because of failing eyesight and lived in a home he built himself atop a sheer cliff overlooking the sea at La Jolla, California. He was 68 and had been married and divorced three times. Survivors include a daughter, Vanessa, and sons Gary and Bruce.

Boren, who stood a husky six-foot-two and was of Swedish descent, was born in Provo, Utah. He grew up in Riverside and San Diego, where he studied to be an electrical engineer. After a stint with San Diego Gas & Electric, he opened a photo studio and camera store in San Diego. He also did aerial still photography and ran a diving business. His first diving equipment was made from an old water heater, a garden hose and a tire pump. In the early 1950s he began doing underwater cinematography for Howard Hughes at RKO-Radio, his first important assignment being *Underwater* (1955). He also made a specialty of shooting aerial sequences. Later, he was director of photography of main units of theatrical films and TV productions as well.

Boren wrote the pilot feature which became the first four episodes of *The Sea Hunt*, a long-running TV series which he photographed both above and under the surface at Nassau. He also shot the *Flipper* series (he called the intelligent porpoise star "a wonderful human") as well as a *Flipper* feature, and episodes of *Then Came Bronson*, *The Rockford Files*, *Daktari*, *Nichols*, *Vegas*, *Code Red* and other TV shows. His features as director of photography include *Rhino*; *Namu*, *the Killer Whale*; *Brewster McCloud*; *Banyon*, and others.

Probably his most spectacular underwater work was the large scale



undersea battle in *Thunderball* in 1965. He and an assistant had a nerve-racking time filming the shark attack scenes for *The Old Man and the Sea* from a suspended cage. He worked on two other James Bond pictures, *Moonraker* and *The Spy Who Loved Me*, as well as *Clarence the Cross Eyed Lion*, *Around the World Under the Sea*, *Lady in Cement*, *The Poseidon Adventure* and *Day of the Dolphin*.

At the time he became a member of the ASC, in 1971, Boren stated that his most rewarding experiences had been "developing and perfecting underwater photography and designing and building underwater cameras and lighting equipment for motion picture features and television for the past 20 years. In so doing, I have accumulated an underwater film log of over 5,600 hours . . . I feel the greatest underwater film is yet to be made. The vast, colorful beauties of our sub-surface vistas and complex, colorful sea life have barely been captured on film.

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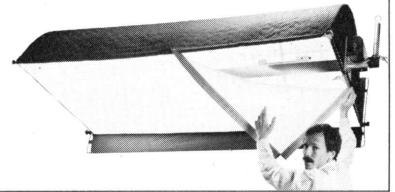
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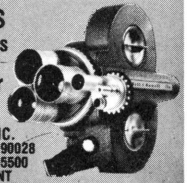
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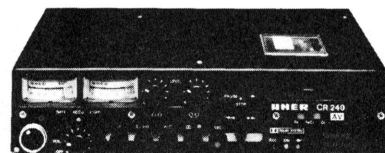
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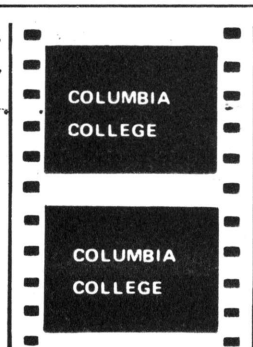
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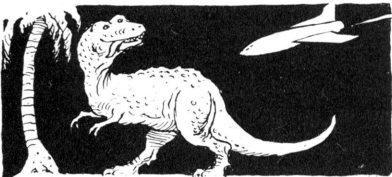
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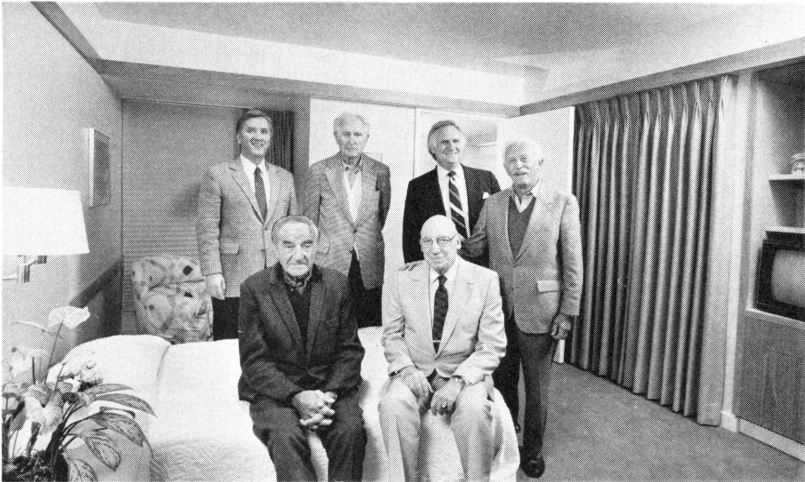
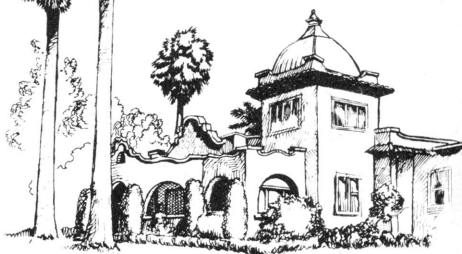
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From the Clubhouse



Group inspects mockup room at Motion Picture and Television Hospital in Woodland Hills. Seated are Stanley Cortez and Al Keller. Standing from left are John M. Pavlik, director of hospital funding, Daniel Fapp, Robert D. Tonry, of the MPTH and Harry Wolf. The A.S.C. has pledged \$100,000 to build two rooms like the one shown in the new 81-bed medical center at the hospital.

Elections in January returned nearly all A.S.C. officers to posts held in 1985. Stanley Cortez will serve another term as president. Leonard South, Harry Wolf and Ted Voigtlander are first, second and third vice presidents, respectively.

Joseph Westheimer remains treasurer, Alfred Keller, secretary and Jack Cooperman will serve as sergeant-at-arms. Daniel Fapp, who was sergeant-at-arms for many years, resigned from the Board of Governors.

• • •

New members elected to the Society include Dean Cundey and Don Thorin, directors of photography; and Andy McIntyre, chosen to be an associate member.

Cundey has been a motion picture photographer for 11 years, and is a native Californian, born in Altadena. His credits as director of photography include *Back to the Future*, *Romancing the Stone*, *Psycho II* and many others. He has just completed principal photography on *Big Trouble in Little China* for 20th Century Fox.

Cundey is a UCLA graduate whose original intention was to become a production designer. After taking a class taught by James Wong Howe, ASC, he changed his interests to cinematography.

Don Thorin, who also became an active member in January, has had 25 years behind the motion picture lens. He began his career as a commercial artist. From film loader to assistant,

to camera operator and then to director of photography, his work has earned him some distinguished credits. He was in charge of photography on *Against All Odds*, *Thief*, *An Officer and a Gentleman*, *Bad Boys*, *Purple Rain*, and many others.

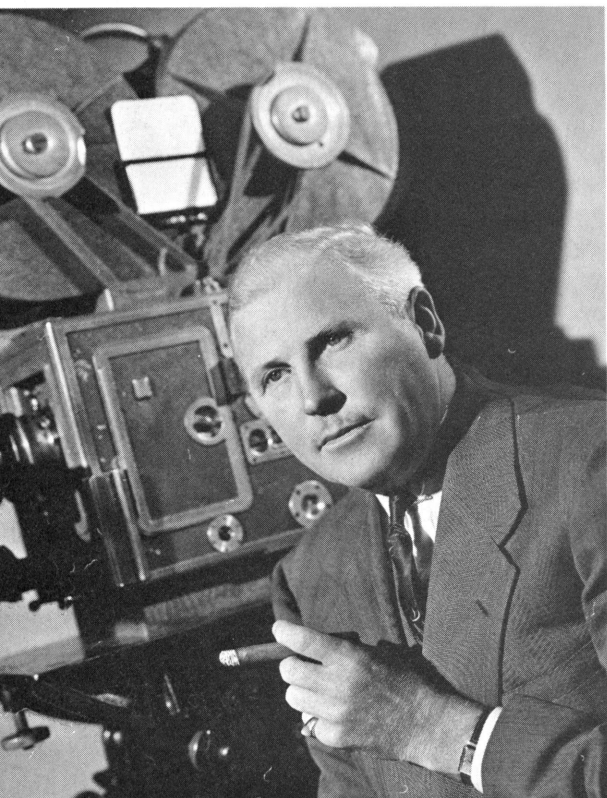
Andy McIntyre, an officer in both Cinema Research Corp. and AME, Inc., has been active in the motion picture industry for 20 years. A New York native, he moved to Hollywood in 1969 and worked as a video technician until 1972. His company, AME, services the industry with film to tape transfers and videotape duplication. In 1985 he acquired Cinema Research Corp.

• • •

Jack Cooperman, ASC, did double duty for the two-hour opener of NBC's new comedy-mystery series, *Blacke's Magic*. In the first sequence, a magician (played by star Hal Linden and a stuntman) is injured while doing a dangerous escape stunt as he dangles from a line attached to a helicopter. Cooperman not only delivered his specialty by photographing the action from another helicopter, but was on camera as well, portraying himself in several scenes.

Yes, Cooperman received both actor's pay and his fee for photographic services from the producing company, Universal. Terry Meade, ASC, was director of photography on terra firma (and the more firma, the less terra).

Artistry With a Limited Palette



Ray Rennahan, ASC, and the three-strip technicolor camera, circa 1935.

The current interest in preserving the world's heritage of cinematography for the benefit of future generations is a source of gratification for all of us. It is believed that at least 50% of the American films made before 1950 are irretrievably lost, and that some 25% of those made by European countries during that period no longer exist. The protean efforts of institutions and individuals in various countries to rescue existing works from oblivion are admirable.

One of the many rewards of viewing the expertly restored older films is an increased appreciation of the genius that enabled pioneer cinematogra-

phers to create works of lasting beauty with very primitive tools. The cameramen at early companies like Biograph, Edison, Vitagraph and IMP worked with cameras as unsophisticated as a box Brownie on film of incredibly low sensitivity and a blindness to certain colors. The results often belie these limitations.

Modern prints made in West Germany of silent films of the post World War I period, only recently exhibited in the United States, are truly remarkable. Those who are familiar with works such as *Siegfried* and *Faust* only from the poor dupes shown in past years have never *really* seen them. The restorations recapture artistry only hinted at in the only versions available previously.

Recent archival screenings at UCLA, showing the development of Technicolor from its crude beginnings in 1916, illustrate dramatically the problems of working with a medium in various stages of development. Especially revealing were two early talkie Technicolor features, one from 1930 and the other from 1932, when the process utilized only two colors, red and green. The first, *Follow Thru*, is a delightful Paramount musical comedy with Nancy Carroll, Buddy Rogers and Jack Haley. Much of it was shot out of doors on a golf course, and these scenes demonstrate why early color films were not especially popular: the skies are more green than blue and there is an overall lack of sharpness such as was evident in black and white movies of the time.

The indoor scenes are considerably better in that the colors of the sets and the lighting are consistent with the limitations of the two-color process. Remarkably, cinematographers Charles Boyle, ASC, (of the Technicolor Company) and Henry Gerrard, ASC, were

able to maintain beautiful, flattering flesh-tones and the distinctive red of Miss Carroll's hair throughout. Such excellent flesh colors are not evident in films made in the rival two-color processes of the day, such as Multicolor.

The accompanying *Doctor X*, made only two years later, is another matter. As photographed by Technicolor's Ray Rennahan, ASC, and designed by Anton Grot, this little gem is so expertly color-styled as to rival the three-color Technicolor films that revolutionized color movies in 1935. If anything, the artistry is even more evident here. Just as a skilled painter limits his palette in order to produce an ideal color balance, so did Rennahan and Grot glorify the limited colors available to them and thus create the kind of harmony which bespeaks of true artistry.

So lovely are the closeups of Fay Wray, made with just the perfect amount of diffusion, that spontaneous audience appreciation was audible. The dramatic impact of the story is heightened immeasurably by judicious use of the reds, greens, browns and straw-yellows yielded by the process. The absence of bright yellows and cyanic blues is apparent only in a brief sequence shot at the seaside.

Because many exhibitors and patrons had objected to earlier color films, a black and white version (photographed by Richard Towers, ASC) was more widely shown than the color version. The color version was successful enough to inspire Warners to make the equally artistic and even more popular *Mystery of the Wax Museum*, in which Rennahan again proved that two-color cinematography could be wonderful.

—G.T.

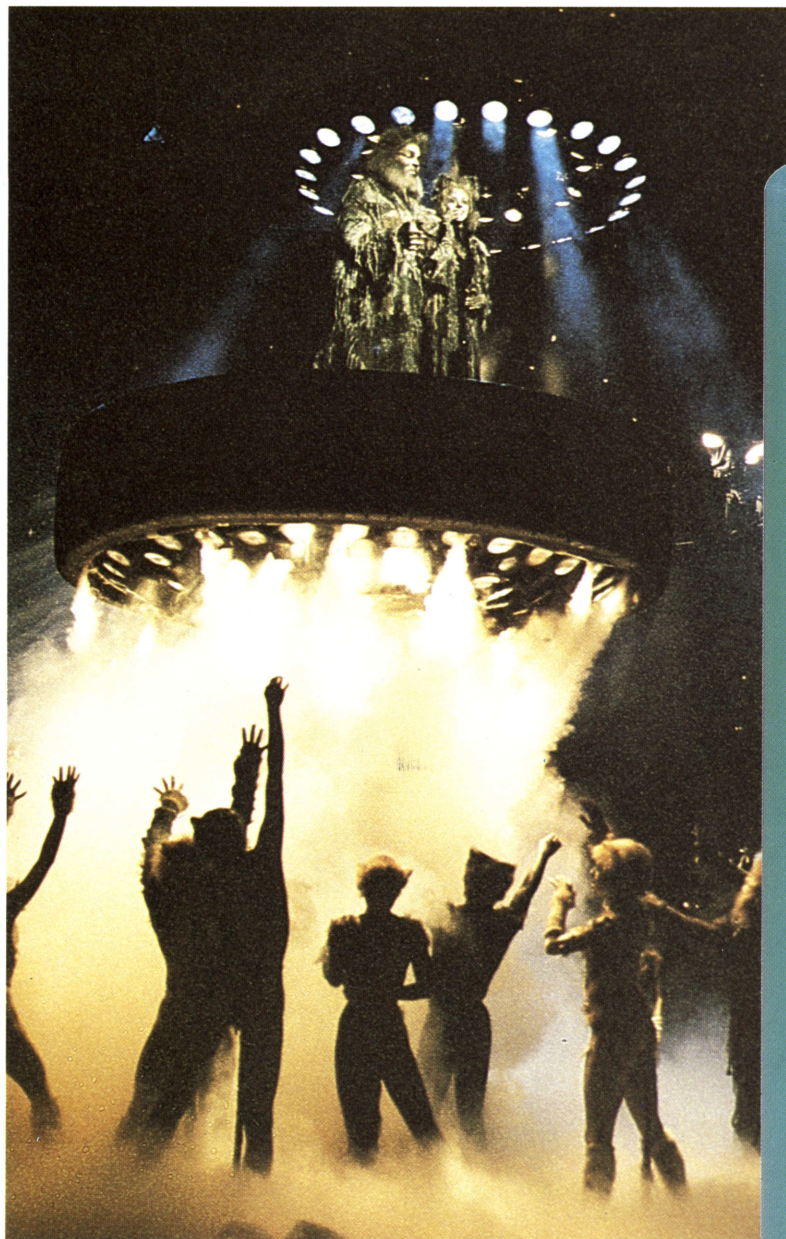


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